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AN ASSESSMENT OF ORGANIZATIONAL ELEMENTS
THAT AFFECT THE INTRODUCTION OF
A COMPUTER-BASED SIMULATION INTO
SOME ORGANIZATIONAL DECISION PROCESSES

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A thesis submitted in partial fulfillment
of the requirements for the degree of
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AN INVESTIGATION OF THE EFFECTS OF
THE VIBRATION OF THE EARTH
ON THE STRUCTURE OF THE
EARTH'S CRUST AND MANTLE

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ABSTRACT
The effects of the vibration of the earth on the structure of the earth's crust and mantle are investigated. The results of the investigation are presented in the form of a series of plots showing the variation of the seismic wave velocity with depth. The plots show that the seismic wave velocity increases with depth, and that the rate of increase is greater for the P waves than for the S waves. The results of the investigation are also presented in the form of a series of plots showing the variation of the seismic wave velocity with frequency. The plots show that the seismic wave velocity decreases with frequency, and that the rate of decrease is greater for the P waves than for the S waves. The results of the investigation are also presented in the form of a series of plots showing the variation of the seismic wave velocity with time. The plots show that the seismic wave velocity increases with time, and that the rate of increase is greater for the P waves than for the S waves.

ABSTRACT

In investigating the introduction of complex, computer-based models into organizations, researchers often focus upon the logical structure of decision-making or the processes of decision-making utilized by individuals involved with a new model. Very little research has been undertaken to illuminate the interactions of ongoing decision processes with the fuller context of the organizational system, the system in which various individual actors perform. This thesis puts forth a systemic view of an organization relevant to two, specific decision processes into which a complex environmental simulation is about to be introduced. The central theme is that it is not sufficient for a model builder to view the introduction of his model solely from the perspective of its providing more and/or better factual information. Rather he must consider the interaction of his model with the relevant elements of the organizational system, the elements affecting the decision processes to which the model will be introduced.

The two decision processes investigated were the branch site selection and officer performance appraisal processes of a medium-sized commercial bank about to implement a complex simulation of its local environment, the SMSA in which it is located. These decision processes were found to interact with four relevant elements of the Bank's organizational system; namely, the perceptions of the local environment, the different organizational units' tasks, the different philosophies of banking held by Bank officers, and the individuals involved in the processes.

The decision processes were described in terms of Herbert Simon's process model of Intelligence, Design, and Choice to illuminate the interaction of each with the organizational system elements. The description of branch site selection concludes that it is not a "rational" sequential process of intelligence followed by design and then choice, but is an incremental process better characterized by an ultrastable cybernetic loop. Performance appraisal is described as a sequential process but a rather disjointed sequence in which organizational politics and differences of task perception in performance review often invalidate the intelligence and design activity of initial evaluations.

The implications of the decision process-organizational system interaction are discussed in an assessment of the Model's introduction. The Model is viewed as being very beneficial, not only to the two decision processes, but also to the organizational system. For this benefit to be realized, however, the builder will have to be aware that reactions to Model introduction may not stem from lack of comprehension but from users' positions in the organizational system.

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In the last instance, I must take responsibility for all of the interpretations, findings, conclusions and shortcomings of this document.

William A. Earner

Boston
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CHAPTER I

Introduction

Organizations frequently have only sparse or disaggregated information about their local geographic, economic and social environment. Trends or projections of future states of a city or region are developed more from intuition than from a conscious analysis of available data.

This research is involved in the introduction of a very complex, computer-based regional simulation of the Standard Metropolitan Statistical Area of North Harbor. This simulation is capable of integrating large quantities of information about the SMSA and then projecting the future state, as measured by several hundred economic and demographic variables, of each census tract in that region. It can provide invaluable assistance to organizational decision processes requiring environmental data.

This research examines some specific decision processes to which the Model will be applied in a North Harbor bank and the pieces or elements of the bank's organizational system which interact with those processes. As it becomes part of a decision process, the Model will affect and be affected by the organizational system elements which interact with that specific decision process. The extent to which implementation of the Model will be successful is expected to be dependent upon Model acceptability to the organizational system or its ability to modify the system.

Decision Processes

Decision processes are often defined in terms of the information processing capacity of an organization.¹ They may be defined more broadly as the total activity that leads up to or results in some organizational action. This action may result from a process of conscious, rational choice, may be the outcome of an interaction of many organizational units, or the result of bargaining and compromise among various individuals or groups in the organization. Information flows alone are not sufficient to describe decision processes. Descriptions of organizations embodying cognitive and nonrational aspects of human behavior in organizations are also germane to an understanding of organizational decision processes.² Decision processes must be studied further as they interact with organizational systems.³ Very few studies of the detailed processes involved at the interface of information and organizational systems have been made. Among those few have been Michael Scott Morton's Management Decision Systems,⁴ and Yair Aharoni's The Foreign Investment Decision Process.⁵

¹See, for example, Stafford Beer, Decision and Control, Wiley, New York, 1966.

²J.G. March and H.A. Simon, Organizations, Wiley, New York, 1958.

³John A. Seiler, Systems Analysis in Organizational Behavior, R.D. Irwin, Homewood, Ill., 1967.

⁴Michael Scott Morton, Management Decision Systems, Graduate School of Business Administration, Harvard University, Boston, 1971.

⁵Yair Aharoni, The Foreign Investment Decision Process, Graduate School of Business Administration, Harvard University, Boston, 1966.

The particular elements of an organizational system affecting the decision processes of this research and therefore affecting the implementation and use of an environmental simulation in a bank are the individuals involved in the decision process, the tasks of groups participating in the process, the potential groups of individuals sharing a common philosophy of banking, and the environment as perceived by the individuals in the organization. It must be emphasized that these elements have been identified relative to the particular decision processes to be studied. They are similar to elements described in more general analyses of organizations viewed as systems but are particularly suited to this research. These elements have been identified by abstracting from opinions and beliefs voiced by organizational members during many interviews and by using some existing systems approaches. They will be discussed in detail in Chapter II.

Objectives

This research seeks to describe the effects of some relevant elements of an organizational system upon the decision processes of branch site selection and officer performance appraisal in the Bank. An analysis of data gathered in the Bank will be used to describe some opinions, attitudes and beliefs reflecting the effects of the system elements upon the processes of branch site selection and officer performance appraisal. The analysis will also provide a description of attitudes, opinions, and beliefs toward computer applications from simple data automation to complex environmental simulation. Using the

analysis, an assessment of the implementation of the environmental simulation into the Bank will be made including a statement of likely occurrences and problems about which the model builder should be aware. Some specific elements of a strategy of implementation for the decision processes analyzed will be made in light of this assessment. The research will conclude with an overall strategy for Model implementation into the Bank.

Methodology

The methodology of this research could best be described as a series of interactions with the Bank's organizational system, each segment providing a foundation for the next, more detailed effort to describe the system's operations and identify the organizational interactions with the two processes of branch site selection and officer performance appraisal. As the research progressed, general working hypotheses were formulated and discarded until some satisfactory picture emerged. In October 1972, an extensive questionnaire was administered to fifty-two of the Bank's one hundred thirty-one officers. Many micro-level hypotheses were formulated and tested concerning opinions and beliefs described by sample officers. Their individual confirmations were not the central focus of the research but rather were used to construct a fuller picture of the implications of opinions for the decision processes and for Model implementation in those processes. A discussion of the current processes and interactions is contained in Chapter III. Discussions of the data analysis are contained in Chapters IV, V, and VI.

Setting

To grapple with the richness of a real decision situation, a single organization was chosen and the "system of action"¹ describing the general context of the decisions and individuals involved has been established.

The research site is a medium-sized commercial bank in an eastern metropolitan region. It is the oldest in the City of North Harbor, having acquired by merger the oldest bank in the region. The Bank holds a very old National Bank Charter and is one of the oldest nationally chartered banks currently operating in the United States. Its assets exceed \$300 million, making it the fourth largest bank in the City. In the past four years competition has increased rapidly due to the fast-expanding presence of two Columbia banks, each with assets of approximately \$1 billion. In addition, many firms previously headquartered in North Harbor which used to keep corporate cash accounts in North Harbor banks are now subsidiary units of larger corporations with cash centrally managed from New York banks. These corporations keep only small residual accounts in North Harbor.

As the population shifted to the suburbs, the Bank's system of branches expanded from six in 1956 to twenty-one currently. During the same period of time, banking services expanded from a few, largely commercial services to a wide variety of increasingly personalized services including:

¹R.A. Bauer, and K.J. Gergen, The Study of Policy Formation, The Free Press, New York, 1968, Chapter 1.

- . 4 types of individual checking accounts
- . 4 types of individual savings accounts
- . 5 types of individual loan plans
- . A major national credit card (This card offered much more opportunity than did continuance of the Bank's own card.)
- . Individual safe deposit boxes
- . Payroll deductions direct to savings and checking accounts

The Bank is organized along traditional functional lines, the functions being Trust, Lending, Marketing, Operations, and Branch Administration. In addition it maintains a headquarters staff which includes the Controller, Auditor, Personnel Officer, Cashier-manager of the headquarters branch, and Security Officer. (See Appendix A for a current organization chart.) Since Mr. Southby's accession to the Presidency in 1968, Trust and Lending have continued as the only functional areas reporting to the President. Operations, Branch Administration, Marketing and the Headquarters staff report to Mr. Rack, the Executive Vice President. This organizational arrangement is symptomatic of some problems in the organizational system which will be discussed in Chapter II.

Most officers consider the Bank to be in a "critical state" with respect to its environment. The regional banking environment has become increasingly competitive over the past five years. Two large banks, each with assets close to \$1 billion, have sharply increased their activity in the Bank's home town. Earnings per share

dropped \$.31 from \$2.94 in 1970, to \$2.63 in 1971.¹ Total assets have grown at an average rate of only 2.5% per year since 1968.² Demand deposits, sometimes referred to as a "bellwether" of banking prosperity, have become increasingly hard to maintain, to say nothing of expanding. Since banks have been required to segregate demand and time deposits in their annual reports, demand deposits in this bank have fluctuated between 62% and 66% of total deposits. For the year 1971 this percentage dropped to 58%. For 1972, demand deposits remained at 60%.³ While this drop may seem small, it has caused considerable concern to officers at all levels of Bank organization. In an effort to deal more effectively with the banking environment, in 1970 the Bank commenced merger negotiations with another medium-sized bank in an adjacent city. The additional assets required in that merger could enable them to better compete for commercial transactions in the area. As the Chief Lending Officer put it, the larger banks enjoyed an advantage.

Well, the competitive situation is very difficult for us because they have allowed the two bigger banks to move into the North Harbor area. When we are talking numbers of dollars, we can go to \$1.75 million while they are talking \$7 and \$8 million. They can walk in

¹Earnings per share rose to \$2.71 in 1972 but \$.30 per share was from the investment tax credit associated with a leasing agreement not commonly undertaken in the Bank.

²Annual Reports of the Bank, 1968 to 1972. (Neither accounting methods nor number of shares outstanding has changed since 1968.)

³Ibid., p. 7.

here and if we have a loan that is borderline, which doesn't look good and that will take \$500 thousand of our money, it looks like \$80 thousand to them. So they will take the gamble.

The merger was contested by the U.S. Department of Justice and is currently in the courts. A result has been cessation of branching or any other banking activity which might be interpreted as a show of "muscle" in North Harbor. It has had a pervasive effect upon all Bank officers, especially top management. The following verbatim comments are representative of feelings expressed by Bank officers:

The President: As you know we are in litigation with the Justice Department and our counsel cautioned us against doing too much.

Chief Lending Officer: . . . now we are involved in a merger. We don't know how long we are going to be involved with the courts. Evidence has shown us that this gives (us) the effect of spinning our wheels: employees feel this.

Executive Vice President: Well, it's (assessing potential in a new area and expanding into it) not going along well at all and for reasons I think we've gone into before and that are pretty much beyond our control. Specifically we've got this merger going on, and as long as that stands staring us in the future, there are a lot of areas, well there is only one direction where we can do anything. (Names area.) For the moment, the Comptroller (of Currency), no, not the Comptroller, really but our counsel, our Washington counsel says 'Don't make any move to get in now because part of our case for the Justice Department is that if you two banks get together, you will have a strong enough base from which you can make a solid effort . . . if you fellows do it on your own, you are destroying our whole argument.' So there you are.

Bank top management, indeed, all Bank officers, are aware of the criticality of their present position. In view of these problems, some officers believe that definite action must be taken in the short run which is of importance strategically¹ and for adequate management control² and which will have a demonstrable impact on the organization's future. Such decisions involve accumulation of demand deposits, acquisition of new branches, the extent of market area expansion, estimation of area potential and evaluation of branch managers. While there appear to be few specific formats for gathering information used to arrive at some plan of action, the Bank does take action in each of these decision-areas as the need arises.

The Bank and the Model

For several years the Bank has been in touch with an urban area modeling expert. The Bank's President, Executive Vice President and Senior Vice President for Marketing were confident of this model-builder's ability and knew he had a pragmatic, user's point of view. When he informed them that he would soon be able to provide them with a simulation model of the Standard Metropolitan Statistical Area

¹See R.N. Anthony, Planning and Control Systems; a Framework for Analysis, Graduate School of Business Administration, Harvard University, Boston, 1965, p. 16. "Strategic planning is the process of deciding on objectives of the organization, on changes in those objectives, on the resources used to obtain those objectives, and on the policies that are to govern the acquisition, use and disposition of these resources."

²Ibid., p. 17, "Management Control is the process by which managers assure that resources are obtained and used effectively and efficiently in the accomplishment of the organization's objectives."

of North Harbor, they saw the possibility of using his model as a possible aid in examining the North Harbor region in light of the current state of earnings, assets and deposits.

The simulation is a computer-based model of the Standard Metropolitan Statistical Area of the Bank's home town, North Harbor. It is based upon a very extensive data base and allows a user to observe the effects of interactions of many variables at once. Variables such as birth rate, death rate, ethnic composition, age and income classifications, education levels, average dwelling costs, dwelling numbers per square mile, and industrial concentrations are combined in the model to present a "map" or description of neighborhoods in evolution from today to five years in the future. These descriptions are scaled to the size of a single census tract. Attached to this basic model is a translator. The translator is a small model built specifically for the Bank. Its function is to convert the large model description into terms relevant to Bank decision parameters. For example, a description of the effects five years hence of a strong "In-migration Rate" on a neighborhood currently composed of second-generation Italian families living in duplex homes could be translated into a picture of potential demand deposits for that area.

The criticality of the current situation has already been discussed. Bank management is aware of the necessity of meeting the demands of local customers for continued effectiveness. More than many firms, banks are intimately linked to the shifting composition

of the local population and shifting fortunes of local economy. This bank is no exception. Management at all levels is currently aware of a need to know more about North Harbor. This need has been emphasized in recent months as some settlement of the merger becomes closer.

For all these reasons, the time is ripe for introduction of a model. It is important to the builder as well as Bank management that the Model be introduced when the need is readily perceived.

Beginnings of a Systems View

The larger project, of which this research was a part, is continuing as of this writing. It seeks to implement the environmental simulation (Model) in two of the Bank's decision processes, branch site selection and officer performance appraisal. If the Model-supplied data is to be used in these processes, individual users and potential users must be willing to accept the validity and usefulness of that data. That is, they must believe it is correct and that action taken based upon Model output will be beneficial to them as individuals, to their sub-units, and to the Bank. Early interviews with Bank officers revealed several characteristics which seemed likely to affect an individual's use of new information in decision processes.

Some dimensions of the contrasting types of individuals were 1) individuals seemed to be either inward-looking or outward-looking with respect to their environment; reaction or proactive in

Zaleznik's terms.¹ They see the environment as constraining or as a source of opportunity; they see themselves as powerless or powerful.

2) Individuals tended either toward a traditional approach to their own and to organizational tasks or toward an innovative approach. They seemed to want either to perfect accepted methods or to create new methods.

3) Individuals tend to view things from either a microscopic or a macroscopic perspective. (They saw their job as a set of details or as a single piece of a larger activity.) Branch officers in particular were polarized along this dimension with some specializing in internal operations and other always working with customers in the community.

To summarize, initial typologies appears as described in Figure 1-1.

Figure 1-1

<u>Type A</u>	<u>Type B</u>
looks ahead to change his environment	reacts to environmental cues
looks for new methods	improves and perfects existing methods
macroscopic	microscopic

These typologies suggested that some forces in the Bank in addition to those unique to individuals affected the opinions and attitudes observed. To define those forces, some groups or potential

¹A. Zaleznik, The Human Dilemmas of Leadership, Harper & Row, New York, 1966.

groups of officers which held different opinions on issues such as whether the Bank should expect customer loyalty or whether future pursuits should be innovative rather than traditional in nature were sought.

A Sociopolitical System

The forces suggested by the individual typologies already discussed were conceptualized as elements of the Bank's organizational system. The interactions of individuals believing in different philosophies of banking, representing different departments in the organization, and having different personal stakes (career and status) in the organization were thought to have a major impact upon Model implementation. The politics of the interaction of each of these organizational elements seemed to affect the decision processes in the Bank. For example, an officer firmly committed to a traditional banking philosophy would probably be rather averse to using tools or espousing projects leading to the ultimate decline in traditional banking, no matter how accurate or reliable these tools are.

While these general political forces seemed to be currently important in the Bank, some examination of past research was thought to be beneficial in more fully understanding their existence. It was believed that this social system research would provide some support for a clearer definition of system elements relevant to the decision processes at hand and that it would provide some perspective for assessing possible implications of those elements upon Model

implementation. Previous research in the Bank conducted by Argyris and Alderfer suggested that the interactions of the informal organization with task has been a major force in creating today's socio-political system.¹ Gibson has isolated three distinct paths of social system evolution which have had a major impact upon the diversity of opinion of individuals and groups in the Bank.² They are existence of an orientation program, expansion of branches and a structural split of the organization.

The research describing the evolution of the Bank's social system conducted by Argyris, Alderfer and Gibson added to the empirical map of those forces in the Bank's current organizational system relevant to branch site selection and officer performance appraisal. The relevant elements were labeled Individuals, Task, Banking Philosophy and Environmental Perception.

The label Individuals is used to describe those characteristics of individual officers believed to be unique to them rather than associated with membership in the organization. These characteristics may include personality variables, background and extra-Bank influences upon behavior and personal career stakes. The exact nature of these unique characteristics is unknown and this research is not focused upon collecting such information. Nevertheless,

¹See Chris Argyris, "Human Relations in a Bank," Harvard Business Review, Sept.-Oct. 1954, and Clayton Alderfer's final report to the Bank of June 1969.

²See Cyrus F. Gibson, "Evolution of the Social System in a Bank," unpublished paper, Harvard Business School, January 1973.

these non-organizationally related characteristics do appear to affect the decision processes in that individuals act in their perceived best personal interest. They must, therefore, be considered.

Banking philosophy is meant to convey the general perspective the Bank's officers hold toward current and future banking practice. Banking philosophies have been categorized into two groups based upon empirical data gathered in interviews with Bank officers. These groups are Bankers and Marketers. Bankers are viewed as officers believing in traditional banking pursuits and practice. Marketers, on the other hand, are viewed as wanting to engage in more innovative banking pursuits. Both of these philosophies will be discussed in detail in Chapter II. It is recognized that the elements Individuals and Banking Philosophy may overlap in their impact upon branch site selection and officer performance appraisal. Certain personality types may tend to be Bankers and others Marketers. For this research, however, the two elements were kept separate to illuminate some organization-related characteristics of the actors in addition to some unique, nonmembership related characteristics.

The element Task is meant to convey not only the substance of the various departmental functions, but also the differences in opinion, attitudes and beliefs among the various task groups relevant to branch site selection and officer performance appraisal. It also encompasses the differences in perception of task between the top managers and among the officers in branch administration.

The final element of the Bank's organizational system chosen as relevant to this research is the perceptions of the local environment held by the Bank's officers. This element seems especially relevant to this research because 1) it is a simulation of the Bank's local environment, the City and Region of North Harbor, which is about to be introduced and 2) the two decision processes investigated, branch site selection and officer performance appraisal, both involve some assessment of the conditions and changes in the local banking environment.

Summary

Thus far, the research objectives have been put forth and the methods for accomplishing those objectives have been broadly outlined including the site and the decisions to be studied. A systems view of the Bank has been adopted as appropriate for this research and four relevant elements of the system have been defined, namely, Individuals, Task, Banking Philosophy and Environmental Perception. The following chapter will discuss the specific framework that will be used and will describe the measurement of the elements and processes in that framework.

CHAPTER II

A Framework for Analysis

Interviews with several officers led to a belief in the appropriateness of a systems view of the Bank's organization. Some conceptual organization is necessary to clarify that view in light of the research objective of assessing and predicting some effects of Model implementation. Many systemic frameworks have been constructed to describe various aspects of organizations. Lorsch and Sheldon construct one using three levels of system including elements similar to Task, Banking Philosophies, and Individuals which were tentatively considered in the Introduction to this research.¹ Its focus, however, is on the individual in the organizational system, and it considers the individual as a subsystem.

Learned et al.² also develop a multi-element systemic framework which includes the organization's environment, strengths and weaknesses, and individuals, as they affect strategy and ultimately the success or failure of the organization. Again the notion of several elements of a systemic framework influencing subsystems and ongoing processes is used to analyze the activity of the organization.

¹Jay Lorsch and Alan Sheldon, "The Individual in the Organization; a Systems View," in Jay Lorsch and Paul Lawrence, Managing Group and Intergroup Relations, R.D. Irwin, Homewood, Ill., 1972.

²E.P. Learned, et al., Business Policy; Text and Cases, R.D. Irwin, Homewood, Ill., Rev. Ed., 1969.

The focus of this research is on the interaction of a system and some decision processes. A framework linking decision processes to some specific elements of systemic organization is required. This framework should be especially suited to the purpose of shedding some light on the specific decision processes at hand, strategic and control decisions concerning the Bank's efforts to cope with its environment. This chapter will discuss such a framework. It will discuss some alternative views of decision processes, the fit of four Bank system elements into those views, previous research in a similar direction, and a specific framework for analysis.

Decision Process Background

Decisions are often described as rational choices resulting in actions which further the decision-maker's well-defined objectives. These choices are made following an extensive analysis of possible alternatives supported with costless - or at least low cost - information. The alternatives are usually ranked in accordance with some logical statement of preference for various outcomes. The alternative chosen is considered optimal in light of the decision-maker's preferences and objectives.¹ More recently this general framework, while maintaining its logical completeness, has been adjusted to

¹

For concise summaries of some of these normative theories of decision-making, see Raymond A. Bauer and Kenneth J. Gergan, The Study of Policy Formation, The Free Press, New York, 1968, Chap. 2.

accommodate the cost of information and the limited capacity of a decision-maker to generate alternatives. Among the more elegant of these procedures is that of Bayesian decision analysis.¹

All of the rational theories assume the existence of some well-defined objectives which are usually measurable. Given the objectives, decisions can be made to further them in some systematic manner. Two classifications of decisions derived from this perspective and relevant to this research are classification 1) by general management function e.g., a strategic decision or a control decision and 2) by degree of structure or programmedness. .

Anthony has identified three classifications of decisions by general management function: strategic planning, management control and operational control.² In this research, the site selection decision is strategic while branch manager evaluations and branch effectiveness ratings are both management control decisions. Strategic decisions may be characterized by their relatively irregular occurrence, lack of structure and dependence upon environmental cueing for activation. Those decisions in the second group,

¹

See, for example, Howard Raiffa, Decision Analysis, Addison-Wesley, Reading, Mass., 1970, or R.O. Schlaifer, Analysis of Decisions Under Uncertainty, McGraw-Hill, New York, 1969.

²

R.N. Anthony, Planning and Control Systems; a Framework for Analysis, Graduate School of Business Administration, Harvard University, Boston, 1965.

management control, may be characterized by their rhythmic occurrence and their focus on measuring performance of the organization or some sub-unit of the organization including individuals.¹

Using this categorization, it is possible to see that the information needs of the two types of decision will differ, sometimes greatly. For example, the site selection decision will require more future-oriented information and information synthesized to describe the entire North Harbor region, while the evaluation decision will involve current information specific to a particular branch. This difference in information needs points to different types of model use and different numbers of officers exposed to it as the decision type for which the Model is used changes. It does not illuminate the process as observed in the activities involved in decision-making. It is activities, however, which comprise the decision process and which are described in Chapter III.

The second relevant decision classification is Simon's programmed-unprogrammed continuum.² This framework puts a structured decision with firm and formal decision rules into the programmed end of the spectrum and places the completely unstructured decision which is original and free of any decision rule or well-developed heuristic into the unprogrammed end of the spectrum. Unfortunately, none of the decisions to which the Model will be

¹Ibid., Chapter 2.

²H.A. Simon, *The New Science of Management Decision*, Harper and Row, New York, 1960, pp. 5-8.

applied in the Bank can be placed at one end of the continuum. Instead, each of the decisions embodies some characteristics of both programmed and unprogrammed decisions. For example, the performance evaluation decision has a structured procedure (see Appendix C, Exhibit 2) including the use of a prescribed format. The activity involved in performance decisions is far from structured, however. It includes the head-to-head confrontation of the person being evaluated and his immediate superior, a very unstructured exchange. It also includes bureaucratic review by several layers of the hierarchy, another mixed, semi-structured process. Again classification by degree of programmedness, which is helpful in the identification of some decision characteristics at the ends of the decision spectrum, is not in itself sufficient for observation of decisions near the center of the continuum. Decisions near the center, however, are those chosen for this research.

In addition to differentiating degrees of structure in decisions, Simon et al. believed the traditional economic model severely limited attempts to describe the activities involved in decision-making.¹ There was no consideration of the time involved in arriving at the decision. Simon et al. suggested that in addition to choosing an optimal act from a set of given alternatives ranked in accordance with some preference function, four other factors must be considered:

¹H.A. Simon, R.A. Cyert, and D.B. Trowbridge, "Observation of a Business Decision," Journal of Business, 1956, p. 238.

- (1) The alternatives are not usually 'given' but must be sought, and hence it is necessary to include the search for alternatives as an important part of the process.
- (2) The information as to what consequences are attached to which alternatives is seldom a 'given,' but instead the search for consequences is another important segment of the decision-making task.
- (3) The comparisons among alternatives are not usually made in terms of a simple, single criterion like profit. One reason is that there are often important consequences that are so intangible as to make an evaluation in terms of profit difficult or impossible. In place of searching for the 'best' alternative, the decision maker is usually concerned with finding a satisfactory alternative - one that will attain a specified goal and at the same time satisfy a number of auxiliary conditions.
- (4) Often, in the real world, the problem itself is not a 'given,' but instead, searching for significant problems to which organizational attention should be turned, becomes an important significant task.¹

From this point, Simon proposed an alternative framework more useful for the description of a business decision. This new classification was in terms of the processes leading to the choice of some course of action. Simon identified three segments of decision process: Intelligence, Design and Choice.² These process segments are defined as follows:

Intelligence is the activity of searching the environment for conditions calling for decision. Design is the inventing, developing and analyzing possible courses of action. Choice is selecting a particular course of action from those available.³

¹Ibid.

²H.A. Simon, op. cit., The New Science . . ., pp. 1-4.

³Ibid., p. 2.

This classification is a major modification of the economic description of decisions. It does retain the logical flavor of those economic descriptions, however. Problems and alternatives are ranked in accordance with some implicit preference function; once ranked they are rationally solved using a satisfactory alternative. Information is not given but sought. Once found, however, it is of the same nature as information in the economic description. The process is generally assumed to be undertaken by a series of indistinguishable individual actors or groups of actors.

Simon's process classification of decision does afford insights into decisions not available in the other classifications discussed. It allows some observation of the organizational activities and individual behavior making up the decision processes by recognizing their time-consuming nature. These activities may be structured or unstructured, of a strategic or control nature.

Thus far the decision descriptions and classifications presented treat the decision process as a deliberate one, one in which problems are at least known. Admittedly unprogrammed decisions only marginally fit in this perspective because structure is deliberately added only as the process becomes more familiar.

Simon's description, however, has provided a vehicle for the inclusion of some time-consuming activity in a discussion of decision processes. It provides structure for observation of concrete activities in an organization. This capacity is necessary for an assessment and prediction of Model effects and implementation,

but it is not sufficient in itself. That is, the descriptions and classifications presented thus far do not consider aspects of or forces in the organizational system which may affect the deliberate Intelligence, Design and Choice process segments.

Some alternative views of decision processes do recognize that other aspects of the organizational system interact with the basic structure of decisions. Among these views are those regarding decisions as the resultants of a sociopolitical process or as outcomes of organizational processes. Both of these views will be discussed in the following paragraphs.

Decisions as Resultants of a Sociopolitical Process

Decisions are not described solely in terms of a deliberate, rational description. An alternative view of decisions sees them as resultants or outcomes of processes not necessarily logical or deliberative but as accommodating the political and social interactions in the organization. Bauer, Pool, and Dexter view the term decision-making, especially in complex situations, as a misnomer. They state that,

The label "decision-making" probably cannot be abandoned entirely, but it is necessary to call attention to how far this phrase fails to describe what happens in a social group between the time that an issue is recognized and the time that one or more persons are committed to a course of action.¹

¹Raymond A. Bauer, Ithiel De Sola Pool, and Lewis A. Dexter, American Business and Public Policy, 2nd ed., Aldine-Atherton, Chicago, 1972, p. 482.

In a real situation, the complexity may be so great, even in a small firm, that any logical or rational deliberation that does occur is lost in the richness of the situation. That is to say, so many nonrational forces impact the deliberation that it becomes impossible to sort out the actual decision steps. Simon's process framework, with its modifications away from the economic model offers a realistic model of a time-consuming decision process. It implicitly assumes, however, that a problem is recognized for which a "satisfactory" alternative is sought and that the segments of Intelligence, Design and Choice always occur sequentially in arriving at the choice. Aharoni questions even that, starting,

We do not see the decision-making process as a sequence of deliberate logical steps, beginning with a well-defined program and proceeding through a search of alternatives and consequences - be they exhaustive or "sufficient" - to a final decision. The process of decision is quite often a very erratic one. Problems and perceptions of alternatives and of consequences are all redefined continually throughout the process.¹

Likewise, Allison discussed the handling of critical decision-making (using as an example the Cuban missile crisis of 1962) as a political process the outcome of which was a resultant of interactions of the various officials.² In this view, a decision is the resultant accommodation of the interests of the many actors and powers involved in

¹Yair Aharoni, The Foreign Investment Decision Process, Graduate School of Business Administration, Harvard University, Boston, 1965, p. 30.

²Graham T. Allison, Essence of Decision, Little, Brown and Co., Boston, 1971.

decision; "decision" is indeed a misnomer. Action is taken not from a deliberate choice among alternatives but rather as a result of political and social processes which impact on a rational explanation.

In this research, nonrational is taken to mean behavior which is not deliberately seeking to achieve some desired outcome, either optimal or satisfactory, but rather seeks to accommodate some number of interacting desires or factions involved with the decision process. These processes involve the parochial priorities and perceptions of the players, their various goals and interests, stakes in the game, positions and power they hold, deadlines they face, and access they have to channels of action.¹

This sociopolitical view of decision processes not only provides a vehicle for the inclusion of observable activity but also espouses a wider systemic view of particular decisions. It specifically supports the inclusion of some nonrational elements, such as politics and individual differences, into the framework. Interviews in the Bank revealed two basically different viewpoints of banking are held by officers. These two philosophies of banking are believed to reflect two powerful, potential groups or coalitions of officers who view new or innovative banking pursuits and aids to decision-making in very different ways.

¹ Ibid., pp. 164-172.

Politics of Banking Philosophy

The two large, potential groups of different banking philosophies have been labeled "Bankers" and "Marketers." Bankers tend to have a traditional approach to banking. They consider commercial banking for business firms and industry as the bulwark of their Bank, go to considerable efforts to cultivate commercial customers who are expected to remain loyal, and view expansion in terms of acquiring an asset base large enough to attract even larger commercial customers. They consider the handling of large trusts a natural adjunct to their commercial business and exhibit pride in handling such trusts for some of the most prominent families in town.

An informal "leader" of the Bankers is Mr. Southby, the Bank President. As a former Chief Lending Officer (head of the commercial loan department), he is strongly in the traditional banking camp.

Some examples of how members of the Bankers group feel about the Bank and its future follow (verbatim transcription):

The President:	I see the Bank . . . as caught between two funnels, under an umbrella of regulation, engaged in a keen competition. . . . There is difficulty in showing an effect in our business - we are caught in a business and can't do anything, sometimes, about it, except in a minor way.
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Chief Lending Officer: Well, the competitive situation is very difficult for us because they have allowed the two bigger banks to move into the North Harbor area. When we are talking numbers of dollars, we can go to \$1.75 million while they are talking \$7 or \$8 million. They can walk in here and if we have a loan that is borderline, which doesn't look good and that will take \$500 thousand of our money, it looks like \$80 thousand to them. So they will take the gamble.

Interviewer: This means a particular threat to corporate customers?

Chief Lending Officer: Yes. This is what we are looking for. The average personal checking account isn't much.

A V.P. Branch Manager: A lot of these hotshot fellows come right out of college and into the orientation program and want to set the world on fire. They do things the way they think they should be done and not with what the law says and not with what tried and true practice has shown! In banking today its dog eat dog! The competition is worse than it's ever been. The Columbia banks are down here trying to steal accounts from us. . . .

Marketers, on the other hand, may be characterized by their openly aggressive pursuit of retail customers, including active support for credit cards, advertising, sales campaigns, and active involvement with the community for business purposes. They also include supporters of completely new lines of business. As a group they view expansion in terms of additional deposits, more individual loans, expanded geographical coverage and new ideas. They recognize the need for active commercial and trust departments but believe their importance is on the wane.

The informal "leader" of the Marketer group is Mr. Rack, the Executive Vice President. Mr. Rack was Southby's chief rival for the Bank's presidency in 1967. Both had been senior vice presidents up to that time.

An example of how a member of the Marketers group feels about the Bank and its future follows:

The Sr. V.P. for
Marketing:

We need all the assistance we can get. Three years ago we were the largest commercial bank in North Harbor. Now we are the second largest bank headquarters in North Harbor and the fourth largest represented here. When you're fourth, you run harder.

This research documents the existence of the two broad political groups. It also investigates the relationships of these groups to individual opinions, beliefs, and perceptions affecting some decision processes for which the Model has been perceived as being a useful tool.

The Marketer camp has endorsed the Model effort thus far, and both branch site selection and officer performance appraisal involve Marketer-oriented officers. Further uses, e.g., model-assisted, regional marketing strategies, have been suggested by some Marketer-like thinking officers.

The existence of broad political groups was initially suggested in interviews with many Bank officers. Subsequently, data retrieved from a questionnaire provided corroboration of these general groupings. In addition to allowing corroboration of the two basic political groups, the questionnaire measured characteristic

opinions and beliefs of individuals and provided data which could be used to classify these by banking philosophy, functional area, and knowledge about computer applications. Detailed analysis of questionnaire data may be found in Chapters IV and V. A copy of the questionnaire is presented in Appendix B.

Individuals in Decision Processes

Allison's description of decision processes as the "result-ant of interactions of the various officials" points to the consideration of the individuals involved in a decision process as being an element of the organizational system relevant to this research.¹ As described in the Introduction, Individuals refers to nonmembership characteristics unique to the individual actor rather than those characteristics better described in terms of organizational membership, e.g., banking philosophy. It is specific individuals who will actually use any model. Their personal stakes in career, status and organizational affiliation will affect their use of the Model. At the same time, however, it is recognized that much individual behavior will unavoidably reflect the effects of banking philosophy and task differences because these elements are related in a system.

For example, an officer perceiving the Model as a substitute for himself and, hence, a major career threat, is not very likely to embrace it.² An officer whose goals are strongly tied to

¹Ibid.

²Paul R. Lawrence, "How to Deal with Resistance to Change," Harvard Business Review, Vol. 32, No. 3, 1954.

some group membership may approach the Model in whatever manner is signaled by group norms.¹ A branch manager who believed that it is the Model, and not his regional vice president, which will evaluate him will at the very least inspect that Model in detail. It is quite likely that he will to some extent refuse to recognize the ability of the Model to describe banking potential in his branch area.

In addition, cognitive differences in officer-users may result in some officers using the Model and others not because they cannot or will not reconcile extensive systematic Model output with their intuitive, preceptive mode of thinking.² Argyris has argued that, rather than allow them freedom for creative thinking, management science models structure problem situations to the point that managers have no room to employ their own, intuitive judgment. Since this is a key ingredient to their continuing work satisfaction, many individual managers will not accept the usefulness of such models.³ Senior Bank officers may well share this attitude.

A number of individual Bank officers may be identified as important in Model implementation. They include the President and Executive Vice President, the four Senior Vice Presidents, the

¹J.G. March and H.A. Simon, Organizations, Wiley, New York, 1958, p. 65.

²See James McKenney, "Human Information Processing Systems," Working Paper 72-4, Graduate School of Business Administration, Harvard University, 1972. (This paper puts forth one such construct of cognition.)

³Chris Argyris, "Management Information Systems: The Challenge to Rationality and Emotionality," Management Science, Vol. 17, No. 6, February 1971.

Controller and his Deputy, the Bank Statistician and other marketing officers, the operations department officers and all of the officers in the branch administration down to and including managers of the smallest branches in the Bank.

Individuals with substantial influence in other areas of the Bank may also influence Model implementation and use even though they themselves will not be users. Included in this group would be headquarters staff vice presidents and senior lending officers. Also included would be individuals identified as strongly in the Banker or Marketer camp, officers strongly committed to either traditional or innovative banking.

Two officers directly involved with Model implementation are very influential in the Bank. The Deputy Controller, while well down the hierarchical chain, is a member of the Senior Staff Committee, the only man ranking below senior vice president to be on that committee. He has been the liaison man between the Model implementors and the Bank. From his position in the Controller's office he has been able to deal with members of both political groups and with all functional departments. He is committed to innovation in general, has a keen grasp of analytic techniques, and is enthusiastic about the Model's long-run possibilities. A young marketing officer has also partaken in surveys of the Region and is working full time in computer modeling.

For specific decision processes various other individuals are critical, the Statistician for site selection, the Regional Vice Presidents for branch manager evaluation and the Senior Vice Presidents for major strategic changes.

To summarize, the individuals in the Bank will be the actual Model users. Their personal characteristics will significantly impact their interaction with the Model. Their cognitive and affective reactions to it will be critical. Their personal stakes in career status will affect their approach to it. In the last analysis it is they who will filter the Model information into the organizational system elements, and it is the action of those elements which will intervene in the information's use in the decision processes.

Decisions as Outcomes of Organizational Bargaining

As an alternative to viewing decisions or action as the result of a political process, Allison puts forth a paradigm of decisions (action) as organizational outcomes.¹ In this paradigm, decisions are viewed as the natural outcome of preestablished organizational routines: standard operating procedures, programs, and repertoires.

¹ G.W. Allison, op. cit., pp. 78-96.

The organizational paradigm draws heavily upon the work of Cyert and March, who have suggested that an organization is a coalition of various groups of its participants.¹ In the Bank these coalition members may be represented by the departments reporting to the Executive Vice President as opposed to those reporting to the President. The opposition of Bankers and Marketers stands as another set of potential sub-coalitions.

Central to an organizational view of decision processes is the expectation that sub-units (departments) will be developed and act in their own best interests, not necessarily in the interests of the Bank.² This tendency is a natural byproduct of functional organization in which specialized expertise is required and specific departments are established to deal with those problems needing that expertise. Selznick has described such "bifurcation" of interest as "causing increased elaboration of sub-unit ideologies" and resulting in "little internalization of organizational goals by participants."³ In the Bank, the continually increasing independence of branches and the admitted poor state of communications between branch officers and lending officers provide examples of phenomena noted by Selznick.

¹R.M. Cyert and J.G. March, A Behavioral Theory of the Firm, Prentice Hall, Englewood Cliffs, N.J., 1967.

²J.G. March and H.A. Simon, op. cit., pp. 36-37.

³Ibid., p. 42.

It is expected that to the extent that officers identify with different task groups, they will form different opinions about the use of computers in general and environmental simulations in particular.¹

Task as a System Element Resulting from
the Organizational Outcome View

Task then is a major element of a framework for this research. Task may be viewed from several levels including the overall activity undertaken to meet some objectives, the major organizational functions, and the specific jobs undertaken by individual officers. For this research, it is the difference in opinions, attitudes and beliefs among the various task groups that are sought for their implications for Model implementation.

Role was not chosen as an organizing concept in this research. A rich description of Role, such as that used by Katz and Kahn, would be a completely different system's view of an organization.² A role system would subsume the individual and banking philosophy elements of this framework. The elements chosen for this research seemed particularly relevant to those aspects of the system that would affect Model implementation as they emerged from interviews with a number of Bank officers. For a few individuals, the concept of Role remains useful in addition to the system described here. The Model could change the roles of Statistician and Regional Vice President greatly. More will be said of this in Chapters III and VII.

¹Ibid., p. 65.

²Daniel Katz and Robert L. Kahn, The Social Psychology of Organizations, Wiley, New York, 1966, Chapter 7.

Of primary interest to this research is the sub-task of branch banking. Unlike the other basic sub-tasks, branch banking is a locational rather than a functional specialization. With the exception of trusts, each of the remaining, basic, functional sub-tasks is performed to some extent in each branch bank - commercial lending, marketing, and bank operations. Different locations cause different mixes of these functions in a branch. For example, the Southport branch, established in 1936, is comparable to a small independent bank in that it has a large commercial loan portfolio, handles a variety of individual accounts, is staffed to provide all but trust services and is very profitable. Homer Street, on the other hand, is only two years old, occupies a storefront-sized building in an inner-city ghetto and has as one of its chief activities the cashing of welfare checks and selling of government food stamps at a miniscule profit margin.

Because they have traditionally performed several functional tasks, branch personnel have not been perceived as possessing any particular functional expertise. That is, a lending officer has always been presumed to know more about loans than a branch officer, a marketing officer, more about marketing. At the same time, the existence of a separate administration for branch banking has legitimized a career in branch management. A growing number of officers have become competent at dealing with a mix of functional tasks.

Branch banking is important today. The President, Mr. Southby, stated in an interview that, "60% of our business is in branches." Nevertheless branches have only recently begun to acquire equal status with the traditional trust and lending departments. Branch banking is relatively new. In 1956 there were only six branches in the Bank. These were located in well-established towns immediately adjacent to North Harbor on the east and west or were in the town's central business district. They were smaller versions of the headquarters bank. Since 1956, branches of many sizes have been added in many locations. These branches have usually been staffed by officers from well-established branches rather than from a general cross-section of all officers. Perhaps because of their lack of main office experience, top management has until recently been reluctant to allow them very much discretion about loans and has required them to check most loans and any "non-normal" transactions with a headquarters officer, either a loan officer or the Branch Senior Vice President.

Of late, branch administration has taken responsibility for a much larger commercial loan limit for its managers away from loan counselors of the commercial department. It is currently pushing for a more definite means to measure branch and branch manager performance with the aim of improving performance throughout the branch system. As a means of ensuring a continued supply of competent managers, branch administration has instituted a within-branch orientation program, rotating promising junior officers and non-officer individuals through all of the branch functions.

Related to this task of branch banking administration is the task of finding, evaluating and opening new branches. While this task and its attendant decisions are very important to the future of branch administration, it is only peripherally a task of that administration. Site selection as a task falls to the marketing department, subject to top management approval. More will be said later of how this task and its attendant decision process are performed.

The sub-task of branch banking provides a capsule picture of the interdependency of bank functions. Lending cannot exist without deposits, and neither area can profit without some smoothly-run internal operations. In general banking activities (deposits and loans of dollars) are mutually dependent upon a single resource and are at least loosely interdependent with respect to time. March and Simon establish these two factors as critical to the existence of any felt need for joint decision-making in an organization.¹ Yet, as alluded to earlier, there is not much felt need for joint decision-making between Bank departments. A regional vice president stated:

The second floor (home of the commercial lending department) has had a very negative reaction on managers over the years because they are not accountable. They do not have the information from the accounting department that shows them what they are doing for new business. So when managers discuss loans with them if they don't like it, they just say no. They don't want to take care of it.

¹

J.G. March and H.A. Simon, op. cit., p. 122.

Another vice president put it this way:

They have no sensitivity on the second floor. The people there were never branch people. They have no exposure to the working economy of a branch. Secondly, it is a secondary responsibility. . . . We have been quite critical of them because they have taken the attitude that, 'Well, I'll do my work and then if I have time, you will come second.'

It is expected that this lack of felt need to act jointly will foster opinions and beliefs that new tools or models are not jointly useful. Some examples could be that departments not currently using any computer-based techniques will not see any reason for so doing in the future and that some departments currently making only routine use of the computer will not see any importance in using simulations suited to other departments.

To summarize, viewing decision processes from the perspective of organizational outcomes provides a foundation for the Task element of the Bank's organizational system. Interviews clearly revealed differences in the various functional departments of the Bank. These differences included perceived differences in Task and in the interdependence of all Bank tasks. It is expected that to the extent officers identify with these different tasks they will form different opinions about the use of computers in general and environmental simulations in specific. Finally, since the Model will be used in decision processes affecting the planning and management control of branches, their nature and evolution were discussed.

Summary

Thus far decision processes have been discussed from the rational, deliberate process-oriented, sociopolitical and organizational process points of view. From the deliberate process framework a structure of segments, Intelligence, Design and Choice, has been drawn. From the sociopolitical point of view, the organizational elements labeled Individuals and Banking Philosophy have been supported as affecting decision processes. The organizational point of view has similarly supported Task as an element affecting decision processes. For this research, another relevant element has been chosen as described in the Introduction. That element is Environmental Perception.

Environmental Perception

A fourth element of a framework to be used in describing decision processes in which this environmental simulation may be used has to do with the Environment itself. Churchman defines a system's environment as, " . . . the things and people that are fixed or given from the system point of view."¹ Lorsch and Sheldon state,

The environment of the system is important in a number of ways. In the first place it is the source of the inputs and the market for the outputs (of the organization). Second, other organizations also exist in this environment which may well be competing with the organization under consideration. Furthermore, the environment in a general way may influence the organization directly or indirectly, and in a way not connected with the major operating task of the organization.²

¹C. West Churchman, The Systems Approach, Delacorte Press, New York, 1968, p. 35.

²Lorsch and Sheldon, op. cit., p. 163.

Lawrence and Lorsch further divide the external environment into sub-environments, each one of which is relevant to a differentiated sub-unit of the organization.¹ Christenson notes the concept of "inner" and "outer" environments of an organization, the outer environment being that referred to by Churchman and the inner environment being what this chapter has referred to as the elements of the organizational system. From this perspective, organization would constitute only the "interrelationships or the interface between the inner environment and the outer environment."²

Environment is then a concept widely used in the study of organizational systems. The focal point of this research is a simulation of one major aspect of the Bank's environment, the changes in the demographic and economic states of the local, geographic area. Environment for this research will be the external environment of the organization, specifically those economic and demographic aspects of the SMSA which the Model will describe. The sub-environments of the specific decision processes, branch site selection and officer performance appraisal, will also be relevant.

The local environment is important to the Bank in each of the ways described by Lorsch and Sheldon. As a bank, the organization is closely coupled to the individual, commercial and corporate

¹Paul R. Lawrence and Jay W. Lorsch, Organization and Environment, Graduate School of Business Administration, Harvard University, Boston, 1967, p. 8.

²C.J. Christenson, "Introduction to Organization and Control," President and Fellows of Harvard College, Boston, 1971, p. 4.

constituents of the North Harbor SMSA. To prosper, the Bank will have to choose sites which will improve future earnings. These sites may not be currently obvious to the interested officers. Likewise, with the ever-increasing pressure of competition, some knowledge of banking potential in current branch areas is becoming more valuable and could well be used as an element of performance appraisal for officers in the branch areas.

While the local environment is important to the Bank and very relevant to the interaction of the specific decision processes of this research with the organizational system, of even greater importance to the implementation of an environmental simulation are the perceptions of the local environment shared by the Bank's officers. This perception of the environment is the fourth element of the organizational system. The Model will offer an alternative to perceptions currently held by officers. It can be assumed that to whatever extent current site selection and performance appraisal processes incorporate some environmental perceptions, those perceptions are rather general or vague. The cognitive complexity of those perceptions cannot approach that of the Model which is able to integrate hundreds of first, second, and third order variables and interactions. Should the munificence of the environment as portrayed by the Model undergo a downward shift, officers are more likely to oppose Bank use of the Model.¹

¹J.G. March and H.A. Simon, op. cit., p. 120.

To measure individuals' perceptions of their local business environment, the City and Region of North Harbor, two adjective descriptions were sought. One description was of the City and the second was of the Region. These descriptions were obtained from a set of two self-administered, adjective Q-Sorts, each consisting of fifty adjectives for the City and Region of North Harbor.^{1,2} This instrument has allowed an estimation of five interpretable factors underlying individuals' descriptions of the City of North Harbor. The scores on these factors have been found to vary predictably with an individual's background and his political group tendency in the Bank. A discussion of this analysis may be found in Chapter VI.

In summary, the environment is important to this research because much of the substance of the decision processes described herein involves knowledge of the economic and demographic variables of the North Harbor region. The Bank officers' perceptions of this environment form the fourth relevant element of the organizational system.

General Summary of the Views of Decision Processes and the Organizational Elements

Thus far descriptions of decision processes have been put forth from the perspectives of economic-rational, Simon's process

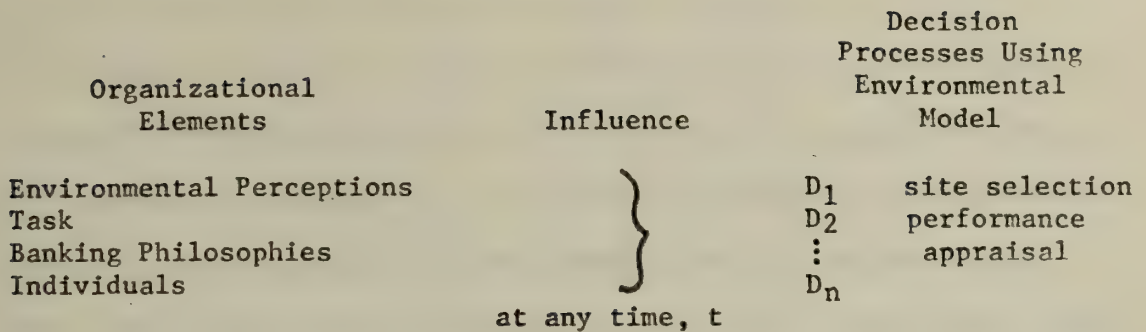
¹Kenneth H. Craik, "The Comprehension of the Everyday Physical Environment," Journal of the American Institute of Planners, January, 1968.

²J. Block, The Q-Sort Method in Personality Assessment and Psychiatric Research, Consulting Psychologists Press, Palo Alto, Calif., 1965. (Especially self-administered Q-Sorts.)

model, sociopolitical, and organizational outcome. With support from these perspectives, three relevant elements of a framework for study have been empirically derived. They are the Individuals, Banking Philosophies, and the Tasks of the units involved. In addition, the officers' Perceptions of the Environment have been included as a fourth relevant element of the system.

While the rational descriptions of decision-making provide analytic power through simplicity, they do not describe processes at all. While the sociopolitical and organizational outcome perspectives provide a realistic description of processes, they have little structure with which to organize an analysis. Simon's process model, while incorporating some "nonrational" concepts, provides sufficient structure in its description to organize some analysis. They may lack structure, but the sociopolitical and organizational outcome perspectives of decision processes do illuminate some relevant elements of the organizational system. The differences in opinion of Bankers and Marketers, members of different task units and individual officers having different career and job stakes in the Model, will all affect its implementation and use. The perceptions of the environment may also affect the Model implementation, particularly if the Model portrays a less than munificent local environment. The framework resulting from these discussions is depicted in Figure 2-1.

Figure 2-1



A Cybernetic Perspective

Before moving to a discussion of another research effort in this direction, one final perspective of decision processes will be discussed. This is a cybernetic perspective.

The economic and other so-called rational descriptions of decision-making concentrated on some abstractions of a decision-maker's action. He evaluated alternatives ranked in accordance with some preference function and chose the optimal course of action. In Simon's process framework, the steps to gather and use information taken by the decision-maker for making choices were developed. In the sociopolitical descriptions, it was hypothesized that while a process view of decision-making was appropriate, that view had to include the complexities of social and political systems along with any analysis of objective information necessary for rational decision-making if one were to understand resultant behavior in organizations.

This final perspective has been adapted from a growing body of literature discussing the nature of control in systems, natural and artificial. This cybernetic perspective has focused on how the decision processes occur in systems in general. Like the sociopolitical perspective, the cybernetic perspective eschews the rational descriptions of economic models, but it does encompass ideas implicit in Simon's decision process model. Among these ideas are those hypothesizing only a limited search for a "satisficing" alternative and that the decision process is adaptive to the organizational environment.¹ The cybernetic perspective views an organization as, in Ashby's words, a "self-vetoing homeostat," a device which always seeks equilibrium.² The decision processes of an organization may be conceptualized as feedback loops of organization interacting with its environment. Each of these decision processes is additionally interacting with a "controller," a subsystem responsive to a different set of stimuli often considered more central to organizational purpose or survival. These dual feedback loops provide, through self-vetoing, an "ultrastable" system, a system which Beer states, "Is capable of resuming a steady state after it has been disturbed in a way not envisaged by its designer."³ In more concrete terms, the cybernetic perspective closely describes a

¹H.A. Simon, New Science . . . , op. cit., p. 26.

²W. Ross Ashby, An Introduction to Cybernetics, Chapman & Hall, London, 1956, pp. 233-234.

³Stafford Beer, Decision and Control, John Wiley & Sons, New York, 1966, p. 290.

process of incremental decision-making. Furthermore, it describes a process wherein decisions are made in relative isolation as the need for some action is signaled from the environment, the controller or both. An elegant statement of decision processes described in this manner may be found in Braybrooke and Lindblom's strategy of "dis-jointed incrementalism."¹ Beer has more recently characterized this process in terms of computer technology as developing an algorithm² capable of determining a heuristic. He states that the algorithm

. . . specifies an heuristic. Alter the solution you are now using a little bit says the algorithm, and compare the outcome with the erstwhile outcome. If this is more profitable, or cheaper, or whatever else we say, adopt it. Go on like this until any variation you make leads to a worse result than you already have. Then hang on to this solution, until the situation changes; where-upon you may do better once again by producing a new variation.

Here in this simple, innocuous statement, which a child could follow, we have the secret of the essentially biological [and Beer believes organizational] process.³

Both of these examples characterize the cybernetic perspective as describing even very complex decision processes in terms of organized groupings of elementary feedback loops.

¹David Braybrooke and Charles E. Lindblom, A Strategy of Decision, The Free Press, New York, 1970, Chapter 5.

²An algorithm is a technique or mechanism prescribing how to reach a fully-specified goal.

³Stafford Beer, Brain of the Firm, Herder & Herder, New York, 1972, p. 71.

The cybernetic perspective can encompass the decision process segments of Intelligence, Design and Choice but would organize them in a manner different from a deliberate progression: Intelligence, Design and finally Choice. Segments would be structured instead to form feedback loops. In this research decision processes will be described as they are actually believed to occur. Intelligence, Design and Choice will be used to describe activity types, but they will not be forced into either a sequential or loop structure.

Previous Research in this Direction

This research is focused upon an organization's use of a computer-based environmental simulation as a tool to aid in some decision processes. Some earlier research of Scott Morton's was focused upon a similar issue.¹ Scott Morton sought to examine the use and effects of a visual display, computer-based simulation in a complex inventory and production scheduling process. His goals were 1) "to see if it was possible to use a visual display system in a management setting," 2) "to obtain some evidence on where . . . such a device could be used and, more importantly, on what classes of problems the system could be used most effectively," and 3) "to determine what impact such a device might have on the decision-making process."² Scott Morton believed MDS (management decision systems)

¹See Michael S. Scott Morton, Management Decision Systems, Graduate School of Business Administration, Harvard University, Boston, 1971.

²Ibid., p. 4.

would be most useful in assisting managers to solve problems considered unstructured in Simon's terms. He identified eight characteristics of such problems which would allow effective use of an MDS. They are

- 1) Large data base
- 2) High requirements for data manipulation
- 3) Managerial judgment required
- 4) Complex interrelationships
- 5) Multidimensionality
- 6) Different functional groups involved
- 7) Economic significance, high payoff from good solutions
- 8) Dynamic environment¹

To some extent, the specific decision processes available for investigation in this current research possess each of the characteristics Scott Morton found necessary for effective use of an MDS. Likewise, the model upon which this research is focused is designed to be an interactive source of a variety of complex information. To this extent this research is similar to Scott Morton's.

A major difference in perspectives may be found, however, in Scott Morton's focus upon individual managers as decision-makers and in his discussion of the involvement of different functional groups in a decision process. Scott Morton discusses the problem of the involvement of different functional groups as follows:

This problem has several persons involved at different stages. Each person has some particular skill or information that is relevant to the decision-making process and this must be combined with information from the specialists from other functional areas before a final decision can be reached. Therefore, this process involves not only an

¹ Ibid., p. 30.

individual solving part of the problem, but also group review and problem solving. . . . In such situations a powerful communications medium, such as the MDS, can be a useful part in the decision process.¹

Implicit in this discussion is the assumption that access to more and/or better structured information will reduce differences among participants from different departments, that given the information individuals would complement one another. To that extent an MDS, "can be used to clarify the issues, directly and unambiguously, (allowing) the discussion to be focused on the pros and cons of the situation."² As a result of his research, Scott Morton's assumptions were confirmed. Data gathered in this research, however, emphatically indicate that clarity, quantity, and structure of objective information are not sufficient to eliminate conflict in some decision processes.

To further compare this research with Scott Morton's, a statement of both frameworks will be necessary. Also required will be some discussion of some possible differences in decision processes investigated in both studies.

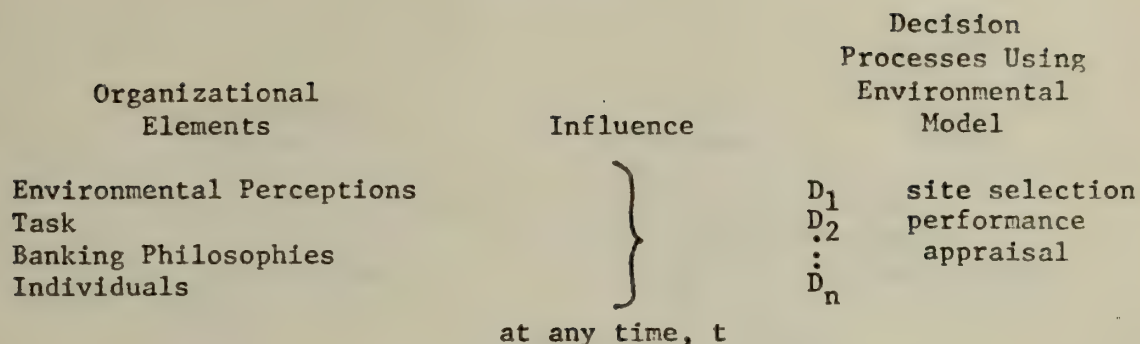
The Specific Frameworks Compared

Figure 2-2 reiterates the conceptual relationship of some organizational elements and decision processes.

¹Ibid., pp. 31-32.

²Ibid., pp. 135-136.

Figure 2-2



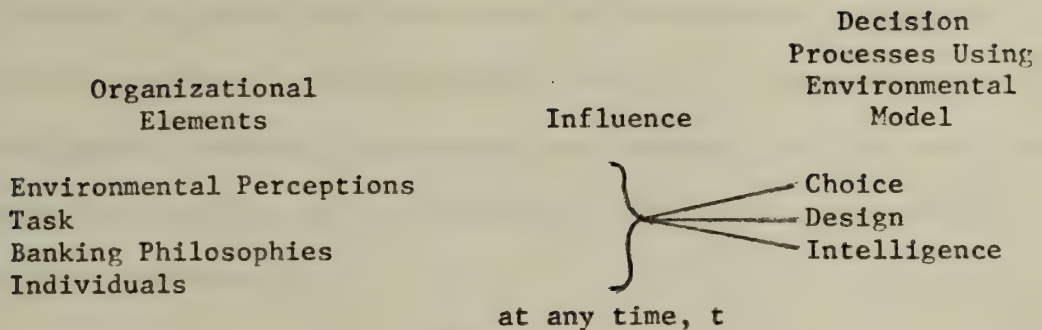
As previously indicated, the decision process description chosen for this research is Simon's process model which uses Intelligence, Design, and Choice as the three steps or segments of the time-consuming decision process. To reiterate, Simon defines these processes as follows:

Intelligence is the activity of, 'Searching the environment for conditions calling for decision.' Design is the activity of, 'Inventing, developing and analyzing possible courses of action.' Finally, choice is the activity of, 'Selecting a particular course of action from those available.'¹

The framework is not so specific as to stipulate which organizational element interacts with which segment of decision process nor does it specify a sequence of interactions. It claims only to describe some interactions of organizational system elements with some Bank decision processes. Figure 2-3 depicts the total framework.

¹ H.A. Simon, New Science of . . ., op. cit., p. 2.

Figure 2-3



In his research, Scott Morton also used Simon's decision process model as a foundation. Scott Morton was primarily interested in whether his MDS would be used and, if used, in finding the point in a decision process at which the use would be most effective. He believed that, "For the purposes of this study it is necessary to have a level of detail one level greater in order to discriminate among the various segments of the decision-making process."¹ To get this added discrimination, Scott Morton divided each of Simon's decision process segments into three more segments of subphases. These are

Generation of input data for the manipulation subphase.
Manipulation of the data to arrive at some appropriate input for the selection subphase.
Selection of some output to go to the next phase of the process or to be implemented as a decision.²

¹ Scott Morton, op. cit., p. 39.

² Ibid.

Scott Morton added one further division to his framework. He divided decisions into programmed or unprogrammed categories according to Simon's distinction and chose for his research to investigate processes of an unstructured nature. For the decision process(es) in which he was interested, Scott Morton's framework is depicted in Figure 2-4.

Figure 2-4

	Intelligence	Design	Choice
Generation	1	4	7
Manipulation	2	5	8
Selection	3	6	9

Each of Scott Morton's sub-segments was hypothesized to occur within each of Simon's basic segments. That is, Generation, Manipulation and Selection each occur within intelligence or design or choice. The ideal sequence of sub-processes would be, 1) Intelligence, a) Generation, b) Manipulation, and c) Selection; 2) Design, a), b). . . . Figure 2-4 numbers the sequence from 1 through 9 sub-processes.

Each of Scott Morton's sub-processes seems to mirror one of Simon's basic segments; Generation mirrors Intelligence, Manipulation mirrors Design, and Selection mirrors Choice. Essentially, the framework hypothesizes that each of Simon's decision segments is, in itself, a smaller decision process requiring the same sequence of activities as required for the overall process.

Using this framework, Scott Morton was able to observe the pre-MDS decision process and isolate a set of "bottlenecks" in that process. These bottlenecks were symptomatic of some deficiency in available information. For example, the data base was too large and difficult to manipulate, information content of the data was low, selection criteria were not specified, and time was a constraint.¹ The MDS was first hypothesized and then demonstrated to be of assistance in eliminating these bottlenecks.

Much as he assumed, Scott Morton found the individual decision-makers working more effectively together given more structured information made available in a usable format. Information previously available only to some individuals and information previously structured in a traditional manner were available to all individuals concerned in a variety of structures after the MDS was implemented.

While Scott Morton's framework seems appropriate for his class of problems, it does not seem appropriate for this research. The two Bank decision processes to which the environmental simulation is being applied differ in some ways. Scott Morton's production scheduling decision was a rhythmic monthly process, at least some of the parameters of which were known to each key actor before MDS. While the process was complex, the objectives were quite clear in production scheduling. In the Bank, branch site selection (or

¹ Ibid., p. 55.

acquisition) is a sporadic process, an implementation of strategy in Anthony's sense. The objectives of adding branches appear to be very vague. Branch manager performance appraisal, while rhythmic, is a very individualized process changing from year to year. Its objectives, while nominally believed to be related to individual promotions, are again vague in practice. For example, it is difficult to determine whether effectiveness in banking or conformance to some expected banking behavior code is a more important objective in performance appraisal. Scott Morton's process required large amounts of relatively available information and seemed to be heavily focused upon the structure of that information. Neither Bank process currently uses much quantifiable information and, indeed, not much is available.

More importantly, while Scott Morton found more effective decision-making to result from improved information availability and structure alone, data obtained in the Bank clearly point to other elements affecting the processes. Scott Morton's assumption of the complementary nature of the relationships of individual contributors to the decision process in the presence of better information likewise does not appear to be a valid assumption in the Bank. In the Bank, all four of the elements of the organizational system depicted in Figure 2-3 appear to affect each of the specific decision processes under investigation. It is expected that successful implementation of the environmental simulation will require attention to be paid to each of these organizational elements. If attention to

even one element is neglected the probability of successful implementation will be greatly reduced. The effect of the new information upon these organizational elements and the subsequent effect of these elements upon some specific decision processes lie at the heart of this research.

This research, like Scott Morton's, required some extra level of elaboration to Simon's process framework. Unlike Scott Morton, however, the elaboration does not lie in the decision process dimension but was achieved in an organizational dimension as presented in Figure 2-5.

Figure 2-5

Organizational Elements	Decision Process Segments		
	Intelligence	Design	Choice
Environmental Perceptions			
Task			
Banking Philosophies			
Individuals			

For Scott Morton, the relevant environment consisted of a set of economic projections for the industry and demand forecasts for the product. In the Bank, the simulation is of the total business environment, i.e., the Standard Metropolitan Statistical area of North Harbor. The decision processes both require estimates of banking potential in that environment. Bank officers' beliefs, perceptions and opinions concerning that environment are crucial to their acceptance and interpretation of model-provided information.

Task was recognized by Scott Morton only when he described the problem characteristic labeled "different functional groups involved." Differences in opinion and action taken by individuals from different task areas in Scott Morton's study were diminished by better information. There was no consideration of task group influence upon the scheduling process other than that influence represented in one individual. In the Bank, the differences in tasks have given rise to very different opinions and attitudes about banking and performance appraisal.

Political influence on decision processes was ignored by Scott Morton. In the Bank, political groupings and considerations are clearly represented in differences of opinion about banking, the environment and, to a lesser extent, the use of computers. It is expected that political considerations will be as important as the best information available when considering the specific Bank decisions of this research.

Finally, Individuals are an important element of both this and Scott Morton's research. They are the only organizational element explicitly addressed in the latter. In this research some of them are examined as strong individual actors, and all are examined as members of groups or potential groups sharing beliefs, opinions, and perceptions in some ways similar and in other ways different from other groups in the Bank.

Figure 2-5 does not show a set of nine boxes representing a series of steps. In that respect it is unlike Scott Morton's. It is an alternate presentation of Figure 2-3. There is no a priori sequential operation of any organizational element upon any segment of the decision process. Nor is there any reason to expect that a specific decision process is influenced by all four organizational elements. It is possible, however, to visualize how each of the four organizational elements might affect the Intelligence segment of the site selection decision process. The environment changes regularly, and its many characteristics may assume different levels of importance to those Bank members charged with gathering intelligence. In the site selection decision process, information concerning the construction of a new shopping center or of a public housing project could be of great value in the search for sites. Task also affects the intelligence gathering. Functional sub-tasks have led to well-specified roles being adopted by members of that function. These roles will affect the aspects of the environment upon which functional intelligence gathers focus. Their political affiliation will further filter the value and probabilities of occurrence that are assigned to the information collected. Finally, the individual's cognitive capacity and style will affect how he organizes and interprets the intelligence gleaned from the environment. If the individual has a broad, complex cognitive map of the environment, he will be more likely to perceive more environmental

information as relevant than will an individual who has a cognitive map confined to only a few environmental characteristics with which he comes in contact every day at work or at home.

Summary of the Framework

This chapter has presented a basic framework for the analysis of some specific decision processes in an organization and has discussed some measures for those elements. This framework consists of four elements of the organizational system (Environment, Task, Banking Philosophies and Individuals) and three segments of the decision process (Intelligence, Design and Choice). This framework will be used to investigate the interactions of organizational system elements and decision process segments for two specific decision processes in a bank: the branch site selection and performance appraisal processes.

Some general literature of decision-making has been discussed. Scott Morton's previous research in a similar direction has been discussed and contrasted to this research.

Finally a general application of the four elements was made to the Intelligence segment of the site selection process. The following chapter will discuss each of the Bank decision processes investigated in terms of the framework just presented.

CHAPTER III

A Description of the Two Decision Processes in Terms of the Framework

The initial decision processes in which the Model will be used are branch site selection and officer performance appraisal. Each of these processes is affected by the organizational system elements described in Chapter II. This chapter will present some background and discuss the workings of site selection and performance appraisal in terms of the framework already established. The following three chapters will discuss attempts to assess some differences in opinion and belief reflecting the organizational elements discussed here. An assessment of the effects of Model implementation into these processes will be covered in Chapter VII.

Branch Site Selection Background

For this research, the term "branch site selection process" refers to the decision process leading up to the opening of a new branch or branches. These openings include outright purchases of small community banks or branches as well as new construction.

Branch site selection is strategic at least to the extent that it involves a long-term commitment of a substantial level of funds. Neither the strategy of which this process is a piece nor the goals the Bank seeks to achieve are well articulated. There do appear to be some implicit goals, however. These are 1) to maintain current market share and 2) to maintain the status in the community the Bank has held for over one hundred years. Profitability is

undoubtedly another goal but at least until recently has been assumed to follow 1 and 2. To achieve these implicit goals the Bank responds to opportunities perceived in its environment and evaluates these opportunities against two implicit criteria. They are 1) the opportunity is attractive to the President and Executive Vice President, and 2) it will fulfill all of the U.S. Comptroller of Currency guidelines for a new addition. With this background, let us investigate the detailed decision process of site selection.

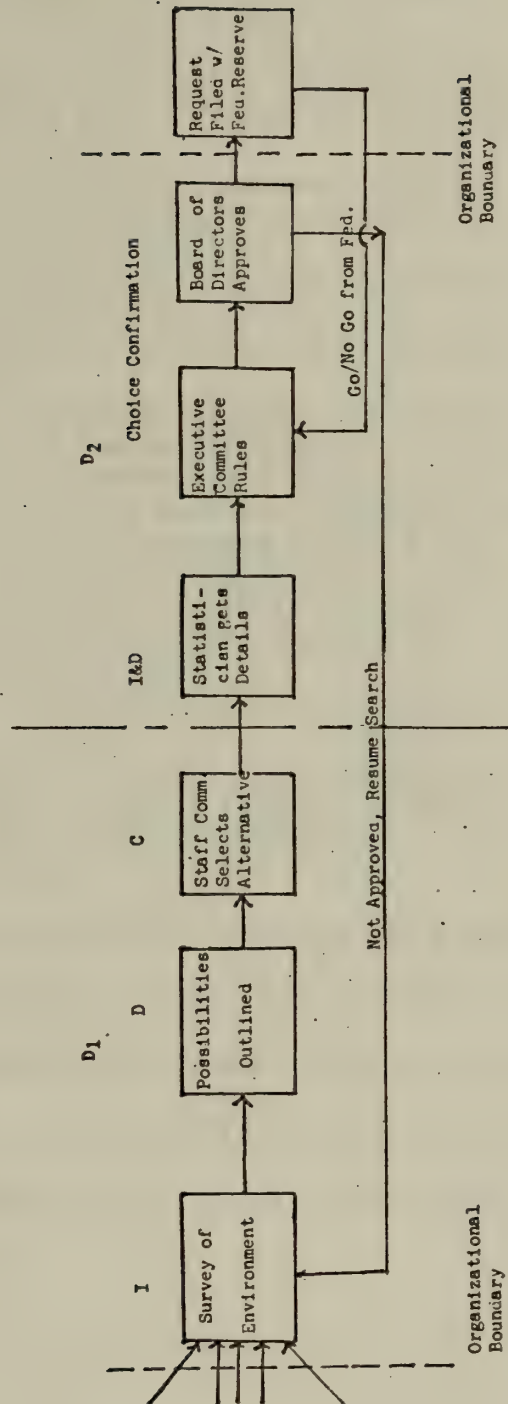
Decision Process for Site Selection

There are two versions of the site selection decision. First is the formal process described by the Statistician, the officer officially charged with heading the search, analysis and recommendations for opening of new branches. Second is the actual process described by the President and Executive Vice President and alluded to by the model builder and several branch managers.

The formal process follows the form of a rational decision. Purpose is well understood, pertinent information is continually gathered, alternatives formulated, and choices made.

Figure 3-1 diagrams the formal process described by the Statistician as follows:

Figure 3-1
Formal Branch Site Selection Process



<u>Activity</u>	<u>Process Segment</u>
1. Statistician surveys Bank trading area for gaps; looks for hidden opportunities, etc.	Intelligence
2. Statistician writes preliminary report of possibilities for the Staff Committee (President, Executive Vice President, Senior Vice Presidents).	Design
3. If Senior Staff thinks preliminary report shows promise, they request a detailed study of specific locations.	Design/Choice
4. Statistician performs detail background and on-site analyses.	Intelligence
5. Statistician makes detailed presentation to Senior Staff.	Design
6. If decision is approved, Statistician makes presentation to Executive Committee of Board of Directors and options are taken on land.	Choice
7. If Executive Committee approves, Executive Vice President makes presentation to Board of Directors (usually a formality).	Choice
8. If the Board approves, Statistician files request with Comptroller of Currency, Federal Reserve Boston.	None
9. Federal Bank examines, audit request for branch.	
10. If Comptroller of Currency, Washington, D.C. approves, land bought or facility leased.	
11. Branch built and manager assigned.	
12. Operations commence.	

As described by the President and Executive Vice President, this process is somewhat different. Among the chief differences are 1) a different type of environmental search, 2) a different function of detail studies, and 3) a different time of choice. Figure 3-2 diagrams this second description as listed below:

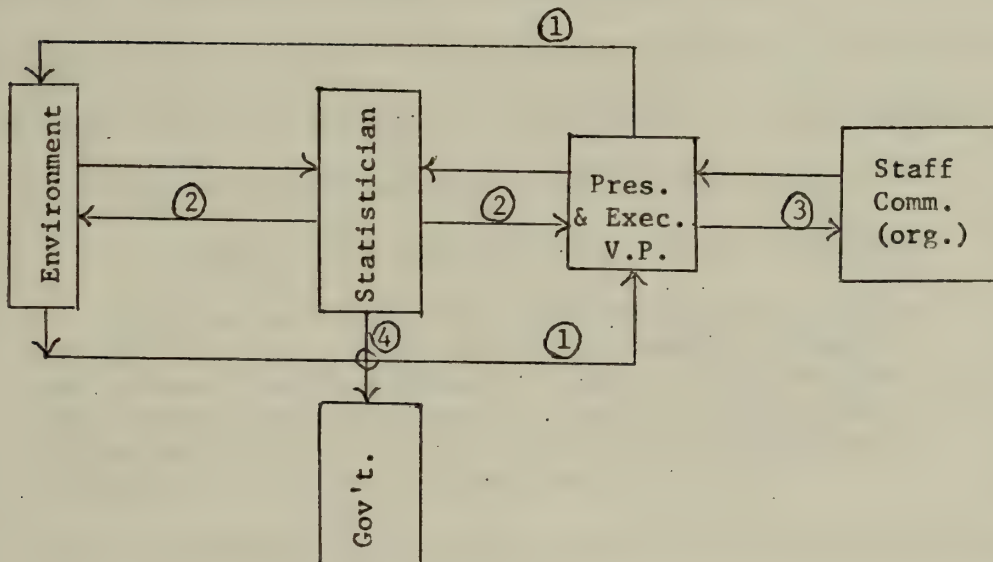
Activity

1. Members of Board of Directors, President and Executive Vice President keep a sharp look-out via social and business gatherings and contacts for likely locations and for small banks ripe to be bought out.
2. Statistician ordered to gather data in support of top management idea.
3. Senior Staff asked to confirm joint decision of President and Executive Vice President.
4. Detailed data gathered by Statistician.
5. Pro forma committee meetings held.
6. Repeat steps 8-12.

Process Segment

Intelligence
Design
Intelligence &
Design
(confirmation)

Figure 3-2



In this second view, a description of what actually takes place, the organization has been conceptualized as an ultrastable cybernetic system as discussed in Chapter II. Intelligence, Design and Choice are not sequential in this description. While the Statistician perceives himself to be the critical initiator of environment-related decisions, such does not appear to be completely the case. Instead, the President and Executive Vice President usually initiate the process, gathering their intelligence from social and business colleagues at lunch, socially, and in meeting with the Board of Directors. Theirs is an opportunistic search, hardly a search at all, but more of a reaction to an opportunity presented. The opportunity is evaluated by these gentlemen, often against criteria such as, "Is it available?" or "Do we have a bank in that area?"

For example, the Executive Vice President related,

As a matter of fact the pitch for the one bank we are now taking a look at came from a member of one of our advisory boards (community leaders in branch areas) who happened to be a personal friend of the president of the particular bank. . . . He put the bee in our bonnet and we carried it from there.

As the controllers of this system the President and Executive Vice President are not making choices in a positive sense but are turning down opportunities about which the Statistician provides unfavorable information. That is they usually take action only in a negative sense.

The President and Executive Vice President discuss a prospective site or acquisition between them. They personally negotiate with the principals involved for any new site or acquisition, especially for acquisitions. Choice appears to be made by top management during their initial contacts with the environment. The Executive Vice President put it this way: "I think you open them whenever and wherever you can. . . . Any kind of possibility!"

To summarize, interviews have revealed that initial intelligence for site selection is gathered by the two top executives and is supported by data gathered by the Statistician. These two activities are not different subprocesses in Scott Morton's terms but are pieces of the same basic intelligence activity differentiated only in degree of detail, i.e., top management seeks general information while the Statistician looks for specific, often-quantifiable details applicable to the same site. Design is largely absent in this description. Alternatives are rarely generated. Choice is usually the end product of "go/no go" negotiations between President and Executive Vice President. Each of the system elements discussed in Chapter II influences site selection to some extent. This influence will be discussed below.

Interaction of Individuals and the Branch Site Selection Process

Only three individual officers take part in branch site selection as described above. They interact with each of the remaining three elements at the same time. These three officers are

the Statistician, Executive Vice President, and President. The perceptions of the President and Executive President govern the recognition of opportunities in the environment. Their characteristic tendency toward incremental evaluation of opportunities rather than rational, systematic gathering of intelligence sets the tone of activity in the domain of new site selection.

The President and Executive Vice President have personal stakes in this process. The President would like to be considered as a successful leader of a bank fitting his own perceptions. The Executive Vice President aspires to be President, preferably of an aggressive, growing bank. The site selection process is critical to the evolving nature of the Bank. Both top managers want to shape the evolution. Their personal views and stakes often lead them to conflict concerning the Bank's expansion.

Rivalry between the President and Executive Vice President has existed for a long number of years. In 1967 the Bank's presidency became vacant with the retirement of Mr. Higgins, a very successful individual who had guided the Bank through the 1960s. Both Mr. Southby, the current President, and Mr. Rack, the current Executive Vice President, were in contention for the job and were both well qualified. The Board of Directors had a difficult time deciding who should be President; deliberations were prolonged. By the time of the announcement the atmosphere had grown tense, and the contenders' rivalry had considerably hardened.

Southby got the Presidency, but the Board, in an apparent effort to appease Rack, made him Executive Vice President, a new position, and placed Marketing, Operations, Branches, and Headquarters under his control. Southby retained direct control of Trust and Lending. He had been Chief Lending Officer. Since the two differed openly on many policies, their subordinates began to do so as well. (See discussion of Tasks.)

Both the rivalry and the opportunistic method of "search" appear to have conveyed a certain message to the Statistician. He is the information gatherer. He compiles and analyzes environmental information in accordance with an American Bankers Association checklist and gathers the information required by the Comptroller of Currency when an application for a new branch is filed. Interviews confirmed that the Statistician has not been known to independently offer alternative sites. He usually provides data only for sites wherein the President and Executive Vice President cannot accept only their own information. He gathers this intelligence largely in accordance with the requirements laid out by the Comptroller of Currency. In an interview the Statistician stated, "The most important thing about this job is knowing where the data is and how to get it." Unless specifically directed he does not generate alternatives, but his data are often critical to acceptance of a site by the President. The Executive Vice President stated, "We always do a market study. That's why we keep John on the payroll." The Statistician's

attitudes and beliefs can have a great effect upon information passed on. He is, after all, the one who goes out to the neighborhood, rides around, talks to businessmen, and collects demographic data. His emphasis on one specific item versus another is very important.

The Statistician's stake in changing this process is large. He has built his reputation as an astute information gatherer. During the merger proceedings he even succeeded in combining the two merger partners' customer accounts in a way not previously thought possible. Based upon this ability to gather data, he enjoys a unique relationship with both top managers. He is not, however, perceived as an information analyst or a decision-maker in the branch site selection process.

There are some individual stakes in the site selection process for the members of the Senior Staff Committee also, but they are more closely related to departmental interests than to personal ones.

Interaction of Task and the Branch Site Selection Process

The broadest tasks of the Bank fall under the cognizance of the President and Executive Vice President. At this level perception of task is a major input to the decision process. The President and Executive Vice President hold somewhat different views of what the broad tasks of the Bank should be in the future. The President, a former Chief Lending Officer, generally favors continued

growth in commercial banking and other traditional pursuits. The Executive Vice President, however, usually favors expansion of retail banking in branches and new, individualized services. As discussed earlier the President's position has been a key factor in the present merger discussion. Completion of the merger will double the asset base and allow negotiation of much larger commercial loans. This basic difference in task definition at the top plays a continuing role not only in the branch site selection decision but in every strategic decision process. Continued pursuit of additional branches further develops a growing branch/retail emphasis in Bank operations. Interview data has led to a belief that the President as a Banker-like officer does not wish to see additional influence or importance accrue to branch banking at the expense of commercial banking. He is likely to perceive fewer opportunities in that sub-environment as a result. Instead, he will encourage more commercial expansion, expansion like the merger. The Executive Vice President favors the expansion of the branch system and may gather some satisfaction if more influence accrued to them. He thinks many opportunities are being ignored. Both men recognize the unavoidable difficulties attending the merger. It is difficult to branch south as a result. The Executive Vice President believes the merger is a divisive error for the Bank while the President believes it to be a unifying goal.

The organization (Appendix A) as it is currently structured reflects the differing interests of the two top managers and the rivalry between the two. The lending and trust functions report to

the President while the branch, marketing and bank operation functions report to the Executive Vice President. This formal structure in addition to reflecting some basic differences at the top, amplifies those differences down through the two groups of functional departments. While there are no one-to-one comparisons to be made, some differences in opinions among departments on general banking issues have apparently been reinforced by the split. In a March 21 discussion with the President, Executive Vice President and Deputy Controller, all agreed with the researchers that a noticeable split did exist which probably contributed to less than warm relationships between lending and branch officers and advanced the tendency to not see interdependencies among departments. It may also contribute to the limited interest taken in the site selection process by some of the functional task units. Operations, lending, and branch administration have no formal or informal part in the Intelligence or Design phases of the decision process. Admittedly some review is exercised in the Staff Committee, but the data is collected by one individual, the Statistician, a member of the Marketing Department. While each branch performs all types of lending tasks, the commercial lending staff has very little role in choosing where branches should go. The different departments think site selection is largely top management business with some Marketing Department assistance. They do not get involved and see no strong interdependencies which would make their involvement necessary.

Of special interest is the relatively little impact Branch Administration has had over new branch site selection. The Branch Senior Vice President gets involved in the process only as a member of the Senior Staff Committee. No branch manager interviewed mentioned anything about the process of selecting new sites. Their only concern was operating those already built. The requirements of branch management are not viewed as being related to the planning of new branches.

Perceptions of task, then, affect the site selection from top management down to the department level. Different perspectives of the general Bank tasks and of the specific tasks of individuals and departments affect the nature and participants in the process.

Interaction of Different Banking Philosophies and the
Branch Site Selection Process

On the surface and in the formal description, different banking philosophies seem to have very little to do with the branch site selection decision. Such does not appear to be the case, however, when talking to people involved in the decision process. Branching itself is considered to be part of the new tide of aggressive, market-oriented banking. Members of the "Bankers" camp, while aware of the increased importance of branch banking, remain convinced that growth lies in large account, commercial banking. (This in spite of the fact that the Bank's President attributes 60% of the Bank's business to branches.) Bankers (except for the President) do not, there-

fore, partake in either the Intelligence or Design segments of the process. They are represented on the Senior Staff Committee, however, with the Chief Lending Officer and Senior Vice President for Trusts. In both descriptions of the site selection process, the Senior Staff Committee assists in choosing final sites for branches. In the feedback loop description, however, this element of choice has been described as a formality; the Committee reaffirms the decision already settled upon by the top executives. Differing banking philosophies, then, interact with the decision process to the extent that they limit Bankers' desire to participate in the process and through the President have been a force in inhibiting the addition of new branches.

Differing philosophies also appear to affect each of the other relevant elements of the system, perceptions of task, individual stakes, and perceptions of the local environment. In fact, these elements are continually interacting with one another. No single dimension, however, is sufficiently strong to alone explain how the organizational system interacts with the site selection decision process.

Interaction of Environment and the Branch Site Selection Process

The site selection process embodies the actual involvement of the organization with its environment. While there is no active search of the local environment, the President and Executive Vice

President let acquaintances know, "We are interested," and act on opportunities which present themselves. The President generally perceives a restrictive local environment without many opportunities. He characterizes it as similar to, "being caught between two [regulatory] funnels, hemmed in by competition." The Executive Vice President perceives a different image, one of "challenge and opportunity" for those who will take advantage.

As Figure 3-2 shows, most of the remaining organization, including the Senior Staff Committee, is buffered from much active interaction with the site selection sub-environment by the two top managers. The top managers prefer to handle all site selection initiation personally and expect no interest from within the organization.

A current example of this buffering activity may be found in Bank officers' perceptions of alternatives for future expansion. The President has initiated and strongly backed the current merger. The Justice Department has taken the case to court under the antitrust laws. As a result the Bank's counsel has urged against any branching activity. Many officers have perceived the Bank to have few other alternatives and are assuming that branching can resume in the future with no real change having occurred in the environment. Since a successful merger will nearly double the asset base, (a necessity for growth in commercial lending) the Banker camp has strongly backed this perception. A successful merger could restore the Bank's traditional

leadership in the region for commercial banking. The Marketers have described the situation as an excuse not to grow. As a result no site selection activity has been performed for over eighteen months.

Branch Site Selection Summary

Thus far the branch site selection process has been described as it is espoused and as it is actually executed. The process segment Intelligence was depicted as a reaction to opportunity rather than an active search, Design was described as the justification of the opportunity and negotiations for price, and Choice was viewed as a decision on whether or not to pursue a single opportunity rather than a selection of competing alternatives. A discussion of the four elements of the Bank's organizational system revealed that each contributes to the process. The process is immersed in North Harbor in an environment perceived as threatening to the President and challenging to the Executive Vice President. The personal split at the top, aided by different banking philosophies, has been at least part of a long-standing difference in opinion between departments reporting to the President and those reporting to the Executive Vice President. Closely related is the lack of interdependence perceived among departments and the belief that site selection affected only top management. Finally, only three officers are central to branch site selection, the President, Executive Vice President and Statistician. Each of these has a considerable personal stake in the workings of this decision process.

Performance Appraisal Background

Performance appraisal reviews are currently conducted annually for each Bank officer in accordance with standard procedures and format issued by the Vice President, Personnel. The appraisal is centered upon a face-to-face meeting of an officer and his immediate superior. This "one-on-one" meeting has evolved from a series of alternative formats including 1) no explicit evaluation, 2) an evaluation by a panel of three senior officers in which the evaluated officer did not take part, and 3) an individualized meeting in which evaluated officers bargained for "points." The procedures changed as the Bank grew and officers felt that a system no longer met the requirements for a full and fair evaluation. The Personnel Department usually altered the procedures unilaterally, after consultation with outside specialists. The format always remained standard for all departments in the Bank allegedly for the purpose of having some consistency in evaluations. A brief history of performance appraisal procedures and a copy of the current standard forms are contained in Appendix C.

Conspicuously absent from the performance appraisal process is any consideration of the branch financial performance or any comparison of that performance to some estimated level of banking potential in the area. While part of the reasoning behind the omission of explicit quantitative data is associated with the knowledge that different branches conduct different types of business depending

upon their location, the most persuasive factor in the omission of such data is that most of branch management believes that there is no quantitative data upon which some branch performance evaluation can be based. The controllership function has always been separated from branch management so there has been no tradition calling for the use of any quantitative data in branch administration which may be available to the Controller.

The President commented that quantitative standards are not possible:

We put a man in a bank where management made a very sensitive decision - put him in a half million dollar building. Management made its decision in its wisdom to build the building that way. This poor guy can't be charged with that responsibility on normal measurements. We can't measure him even though we have a job description and he sets his own budgets.

While the Branch Senior Vice President receives monthly income statements for the branch system as a whole, allocations and timing problems make such reports impossible for each branch. The Controller's office is working on this problem in conjunction with the Bank's data processing group, but as yet no branch-specific income or expense reports on a monthly or quarterly basis have been developed.

The Branch Senior Vice President and the Controller receive reports of direct branch expenses, but these again are of limited use for evaluation because even directly chargeable expenses are relatively fixed. Labor, for example, is fixed by the

staff allowance. Work measurement is not very effective for most branch jobs because workload depends upon when the public enters the branch. Tellers, for instance, work at a peak rate only one or two hours a day. Beyond that business is usually quite variable. Tellers require some relatively lengthy training, however, and generally are not hired on a part-time, hourly basis.

Several reports of financial detail are available to the Branch Senior Vice President. Chief among them is the daily Proof Sheet which lists each branch's intake and dispersal of cash by teller. Any overages or shortages are prominently noted on this machine-prepared report. This report also goes to the Controller, the Cashier, the Executive Vice President, and the President. While excessive shortages or overages cause some concern to top management and branch managers alike, the Proof Sheet is not very effective for evaluation of managerial performance beyond training in fiduciary responsibility. It gives no indication of how well a branch can be doing or no indication of the extent of total branch transactions in a given day. It is simply a continuous tally of cash transactions.

The two Branch Regional Vice Presidents make regular calls at each branch, both to offer assistance to the managers and to check up on how they are doing. While these visits are important and provide a wealth of information about branch activity, personnel and market problems, and a manager's capacity to cope with his job, they provide very little information of a quantifiable nature, either

concerning what the manager is actually doing or what they, the regional vice presidents, think he could be doing. Both the Branch Senior Vice President and his regional vice presidents have on occasion considered how to define a branch's trading area, set a performance standard on that area, and then to evaluate a branch manager on how well he meets the standard. It is especially difficult to determine the actual area of branch impact. One branch's area often overlaps that of another. The environmental simulation is intended to be a link in the process of projecting both branch trading area and some level of expected branch performance.

Budgets

Each branch manager must prepare and submit an annual budget. This budget is prepared under guidance from the Controller and submitted to him. The Branch Senior Vice President is not in the line of budget approval. He does counsel branch managers in budgeting and does have some influence over their operating budgets through the Executive Vice President. Nevertheless budget adjustments are often issued from the Controller's office without any concurrence from branch administration.

Budgets were projections of deposits, loans and investments, direct and allocated income and expenses. They were not constructed to illuminate funds directly controllable by the branch manager. Many allocations of income and expense were necessary for the Bank as a whole. For example, some branches usually had an

excess of deposits over loans, while others were always loaned out in excess of deposits. To accommodate these differences and to allow an overall balance in deposits and loans, a central fund had been established some years back. The Main Office, which held and maintained the fund, also participated in its use. Branches whose loans exceeded the required deposits were permitted to draw from the fund, and branches whose deposits exceeded the loans in their area were required to put money into the fund.

Income from loans made from the fund money was credited to branches based on that branch's share of deposits in the fund. This allocation was designed to provide incentive for every branch to encourage deposits. In fact, the Branch Senior Vice President noted that this policy seemed to have the effect of discouraging some branch managers from expanding their loan portfolio, inasmuch as they did not get credit commensurate with their effort.

While budgets provided a copious quantity of data, they did not provide sufficient data structured for specific branch evaluation to be in any way used in performance appraisal.

Decision Process for Performance Appraisal

The performance appraisal interview described in Appendix C is the first step in the appraisal process. Upon completion of the initial interview, the regional vice president recommends a raise and/or promotion for the manager evaluated. From this point forward, the recommendation is processed through a series of five reviews

culminating in a vote by the full Board of Directors. Each reviewing authority has the privilege, often exercised, of changing the initial recommendation. A diagram of this process, including some possible end points, is presented in Figure 3-3.

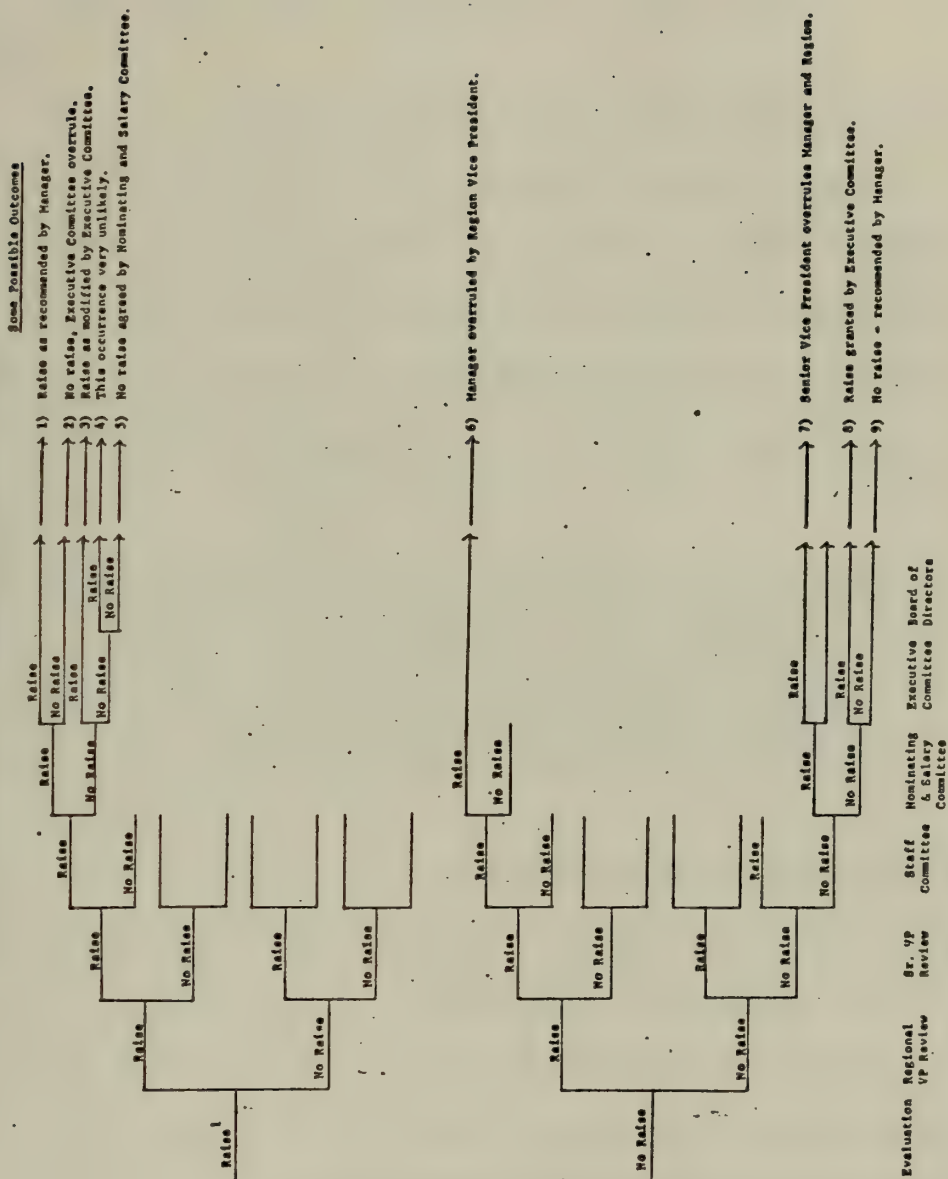
Of the three basic processes - Intelligence, Design and Choice - Intelligence consumes the most time in this process. Intelligence, or information gathering takes place very informally throughout the year by the branch manager's evaluating senior during periodic trips and from many conversations. This information is concerned with the performance of the branch and with the performance of its manager as the leader of the branch.

In this process the "alternatives" expressed for Design and Choice are the performance rating categories on the forms distributed by Personnel. The appraisal interview does, however, serve as an element in Design by creating a two-party forum for evaluation of Intelligence. The subordinate and his appraiser mutually negotiate the interpretation of intelligence, including subjective intelligence, giving it some structure so that the manager's performance may be placed in one of the preestablished alternative categories. It is the "one-on-one" confrontation that is the heart of this process.

The Senior Branch Vice President said:

The most sensitive part of this whole program is the personal confrontation. It's always great to have a good one. . . .

Figure 3-3
Steps Through Which a Recommendation
for an Assistant Manager's Raise Must Pass



This is a difficult situation for both parties. At least one regional vice president is convinced there will never be "high consistency" across appraisers in the quality of these appraisal dialogues.

The branch officers were all aware of the constraints on rewards in recent years due to the cessation of branch expansion. This knowledge of a lack of growth was factored into the "Intelligence" estimates of appraisal interviews, with managers emphasizing their own work and regional vice presidents selling future rewards to officers performing effectively now. The North Region Vice President put it to a manager this way:

We are limited today, as you well know, and it is too bad because this is a time when many people are growing are are deserving of a reward for it and we just are not able to give it to them, but let's hope that when the chains come off, and management realizes what we've been through, that there are certain people that are going to deserve additional consideration. When that takes place . . . time will tell.

Once the performance has been evaluated and structured to fit one of the alternative categories, the evaluating superior must choose a recommendation for 1) a salary change (including none), 2) a position (job) change, or 3) both a salary and a position change. Each reviewing body may modify the original choice and they often do so significantly. The Senior Vice President of Branches is aware that so many separate judgments often cause a manager's final raise to lose any connection to his performance. A compensating

tendency has been to give everyone the same percentage raise. The national wage controls in late 1971 and 1972 enforced that tendency, especially since ceilings within a job category were low.

The reviews of appraisal interviews beyond the department Senior Vice President are not thought to involve the accumulation of any new intelligence. In fact, very little information other than interdepartmental comparison is used. The branch administration does not like this situation. A Regional Vice President stated,

We are closest to the trees. We are out in the field, and we make the reports. We make any analysis that is warranted. If you agree with our thinking, and unless it is a critical situation of which we were not aware - one which warrants a reversal - then we should not be overruled. They should say, "you've discussed this and you fellows agree." It usurps our authority to have someone who is not close to the situation say, "Instead of \$1,500 give him \$1,000." They vote "yea" and that is the way it goes. . . .

In spite of the loss of relationship between the initial performance appraisal and final raise or promotion which often occurred in the lengthy process of review, the Branch Senior Vice President thought the reduction in number of steps unlikely. The Bank has a Board whose members want to be active, not only in salaries and promotions, but in loan policy and operating policy as well.

With this general process in mind, the interactions of organizational system elements and the performance appraisal process will be discussed.

Interaction of Individuals and the
Performance Appraisal Process

It is individual officers who appraise and get appraised. Their level of satisfaction with the current process will be a major contributor to change in that process. In this instance, it is dissatisfaction which results in change, not some positive push for a more optimal system. Today's system (see history in Appendix C) is the result of trying to eliminate dissatisfaction.

Within the branch administration, the level of satisfaction varies. A number of opinions were expressed during interviews. Among them were these:

- V.P. 1: Each year it seems it's with a different formula that I'm evaluated. None are terribly satisfactory.
- V.P. 2: The performance appraisal system that was begun several years ago is one of the best things to ever come along. . . . Before that there was no such thing as a job evaluation. The end of the year came around, and you got a raise or you didn't, depending on who your boss was.
- V.P. 3: A new form was just sent out and Personnel said, "This is a change in the form from what it was last year. Go ahead and use it." I think there are more questions to ask. We have got to get management and Personnel together to go over a form that gets handed out!

Likewise the opinions concerning the increased use of more quantifiable information varied.

At least some of the branch officers sought more objective criteria for evaluation, however. They did not think Bank management was aware of their effective performance.

Branch Mgr.: I will take full responsibility for this branch. They have got to take responsibility for the rest. I had a hundred and some odd thousand in installment loans in May, which gave me a gross income of \$19,000, which will net me probably about \$17,000. I had a goal set up of \$20,000 a month. I've got to hit \$20,000 a month in installment lending to break even and to make a few dollars on this branch . . . and I will. If this branch is losing all kinds of money, I won't come around with my hand out, and say, "Walt, well, gee. . . ."

Others believe that the current system is already too impersonal, discounting loyalty and dedication. One manager stated,

I think they do probably recognize dedication and length of service, but I think sometimes too, they move a little bit too fast in the area of responsibility. If I were to be put in another branch - hopefully I won't be - but if I were, I could keep that on my mind constantly. I worked here for thirty years, dedicated, never take a day off, never out sick. . . .

For all officers, the personal stakes in the performance appraisal process are high. These are career and success. The system is bound to be criticized and viewed with microscopic detail as long as some officers get promoted and others do not. There is no universal support for any explicit quantitative input to appraisal nor is there such universal support for the continuation of the current use of no quantitative data. The introduction of quantifiable model-supplied information into this process will not be universally accepted. Its accuracy will not be the major barrier to its use. Rather it will have to be shown to be compatible with some personalized, non-quantitative information currently in use.

Interaction of Environment and the
Performance Appraisal Process

In gathering intelligence upon which to base his appraisal interview, the evaluator must look for evidence of performance within the branch and of branch performance in the community. At present this information is gathered from frequent visits to the branch, discussions with the manager, and review of reports mentioned earlier. There is no specific format for gathering this information nor are there any specific rules for determining what information should be brought into the discussion.

Regional vice presidents claim to view the operating environment of each branch separately. In accompanying the South Region Vice President on two appraisal trips, it was noticeable that he did refer to some general perceptions of two different branches. The inner city branch was described as "sitting on a powder keg." Two problems, a large non-English speaking population in the area and a Balck population "itching to yell discrimination," dominated the Regional Vice President's perceptions of this branch's environment. He had previously managed the second branch, a well-established institution in a satellite city to the south of North Harbor. Competition was the dominant aspect of the local environment mentioned there. For a long time the Bank was the only financial service in town; now there were six. In addition, a very large rubber company, previously a major customer, had all but closed down operations.

The claim of considering an environment for each branch area individually is also used as some justification for a non-quantitative appraisal. For example, a senior branch administration officer stated,

We have a branch in the ghetto which was acquired through a merger with the Mill Ferry Trust. It was their only branch and it is just over the Bushkill River from Avon. It never was a money maker for the Mill Ferry Trust. It is, however, strategically located in a very heavily trafficked area. There was some business in that area in a fringe area down by the beach. However, after our merger, the Redevelopment Authority came along and they just about cleaned out all the business down by the beach. It has been slow in being rebuilt and the Authority has been dragging its heels. There is just no growth down there at all. Traffic patterns make customer traffic problems horrendous. Our parking lot is very limited, and there is no other place for off-street parking. We are conscious of these difficulties and want the people minding the show at that branch to retain whatever business is there. There is no growth factor, however, and yet we have been reluctant to close or sell the branch for competitive reasons. We are very confident that the manager and his assistant are doing a good job, and we take all of these difficulties into consideration in their evaluation.

This recognition of very individualized branch sub-environments is not always conveyed to the branch managers. A particularly forceful branch manager put it this way:

The actual performance review itself leaves much to be desired. This form is fine but what does it say about me here in Brandon. We know his technical skills, know he's dependable, has good judgment, is a great guy, has a good organization going, fine! But what's he doing in Brandon?

As mentioned previously, many branch managers want attention to be called to their specific work and area, particularly in a time when raises and promotions are difficult. Management has made continuing efforts to do so, but these efforts have resulted in a format wherein no hard specifics about a particular area are allowed, with a resulting tendency toward the use of more general statements.

Interaction of Task and the
Performance Appraisal Process

In this research, only branch manager performance appraisal has been investigated. Within this single task grouping, however, exist two types of branch management. Gibson has identified these types and characterized them by the terms "Insider" and "Outsider."¹ An Insider views his job as one of running a smooth office. His tellers are well trained, all of his subordinates are friendly toward customers, and his procedures are uniformly smart. The following statement was made by an Insider who has worked in one branch most of his career:

I've been manager of this office two and one-half years now, and vice president for two years. It's my home, and it's my branch and I love it.

Lots of problems, always - personnel problems, customer problems, staff problems, but generally speaking, things go pretty well. . . .

¹ See C.F. Gibson, "Evolution of the Social System in a Bank," unpublished paper, Harvard Business School, Boston, January 1973.

An Outsider, on the other hand, views his job as being a link with the community. He is much less concerned with internal branch workings, preferring to delegate these "simple" tasks. One Outsider stated the following:

I support there are some who would approach their job strictly from a job standpoint and not get involved with the community. I don't know how you could do this because you become involved quickly. . . . I feel that the role of a branch manager extends far outside the confines of the bank itself. That's a very broad description. If you want to get into the technical things about running of the branch, that type of thing, I can give you my opinions there. You know, the simple things. You've got the Bank's property to protect. You've got your personnel to keep trained.

These types are explicitly recognized by the branch administration. The value of each is not questioned. Formal policy is to pair an Insider and an Outsider in a single branch whenever possible. For example, a Regional Vice President commented on a recent situation as follows:

We had a manager and an assistant manager who were both inside-oriented. Well, marketing had no influence there at all. In an attempt to squeeze any business that might be there at all, we transferred the assistant out and put in another young fellow who is a gung-ho marketing type. The manager can handle the operations end, and we had some talks saying that we wanted that assistant out there making calls and making the rounds. The manager is not a salesman to begin with, but he is a great guy in the bank. So fine. Stay in the bank. But let the assistant out!

While the formal policy recognizes the legitimacy of both types of branch officers, Insiders and Outsiders, observation of the two Regional Vice Presidents has revealed that they informally tend

to encourage behavior fitting either Insiders or Outsiders for all officers in their respective regions. Gibson has argued that these differences in perception of task affect the performance appraisal process in the different regions.¹ The analysis of Chapter IV helps to confirm that these differences in task perception (Insider or Outsider) are noticeable by East and West branch managers. Transcripts of appraisal interviews indicate that to some degree Regional Vice Presidents signal their subordinates to be like them. For instance, the Inside Regional Vice President counseled a subordinate:

I think you and I are pretty much from the same cloth. We know what we want to say, but sometimes it's difficult to express it. I don't think either one of us would carry the handle of super salesman, but I just think that your ability is more than adequate.

The Outside Regional Vice President urged a subordinate:

You know what happened in that case, Tom, only proves the philosophy I've had for years - if you have a situation and you are afraid that it is not going to be accepted, don't be afraid, dive in there and do it. You'll find, in most cases, the problem really wasn't as bad as you thought it was going to be, and in this case, I think you proved it. If you had gone right to the three of them and told them, they probably would have accepted it right there . . .

These differing perceptions of task, held by managers and regional vice presidents, have an important effect upon performance appraisal. All parties to the process recognize the importance of both Insiders and Outsiders to continued success in branch banking. Nevertheless, managers and regional vice presidents tend to value

¹Ibid.

more highly the group within they personally feel they belong. At the manager level, this situation is a partial influence in the development of Insider managers in the Western Region and Outsiders in the Eastern Region. The opinions of these two groups often differ on both general banking and performance appraisal issues. Their opinions of more quantifiable input to performance appraisal also differ significantly.

While Insiders and Outsiders are both formally encouraged and developed as complementary types in all branches, the informal alignment of regional vice presidents to a single type tends to influence branch officers in that region to behave to fit only one general type. Signals encouraging this behavior are communicated during each officer's appraisal interview. Each manager in turn communicates some of this dominant style to his subordinates.

Interaction of Banking Philosophies and the Performance Appraisal Process

The politics of branch performance appraisal appears to be of relatively little importance directly during the interviews and through review by the Branch Senior Vice President. Negotiations at this level are among colleagues with a similar aim, i.e., a successful, growing branch system, in spite of some differences in perceptions of important tasks. Differences in philosophies are normally subordinated to this aim. At this level, the branch administration would like branch-specific appraisal, and potential conflict is a function of departmental rather than philosophical differences.

In reviews of the Staff Committee and beyond, the politics are more important. The general focus of the Bank may be estimated from raises and promotions and across functional areas. Promotions of branch officers to important posts, especially in non-branch areas, would indicate the growing influence of Marketers. Promotion of lending officers to similar positions would indicate the growing influence of Bankers or more precisely "Banker-like thinkers." The Board's appointment of the current President from the position of Chief Lending Officer was not lost on the Bank's officers. It was a signal that the Bank would pursue its traditional course, perhaps aggressively, but still traditional. The merger begun in 1970 tended to confirm this signal. Banker-like officers are expected to support a continuance of the traditional appraisal system. They will not actively seek alternative models of the North Harbor area, models which may support a nontraditional focus for the Bank's future.

Summary of Interactions in Performance Appraisal

Performance appraisal is intimately linked to an officer's career path and objectives. It is also linked to the Bank's overall prosperity. In the current system, promotions rise and fall in numbers with the prosperity of the Bank. When times are good, promotions and raises are plentiful. When prosperity fades, so do chances for promotions. The present system bestows its rewards

based upon this general ebb and flood of prosperity. An exemplary job in a particularly hostile banking environment is rarely rewarded, but a poor job is even more rarely punished.

The current appraisal system has evolved over the years as the Bank has grown. In an effort to produce better evaluations and accommodate officer dissatisfaction the Vice President, Personnel has altered the appraisal procedures.

The accumulation and organization of information for performance appraisal (intelligence gathering) is the most critical of the three segments of this decision process. The type of information used is heavily influenced by the individuals involved, both in a specific interview and in the process in general. Most officers favor continuation of personal trait-like information while some favor the use of more branch-specific quantitative information. The emphasis or value attached to information is influenced to some extent by the Insider/Outsider bias of the reporting superior, the Outsiders favoring quantification. The environment supplies much of the information to this process. Political beliefs strongly influence the valuation of the environmental factors important to the Bank. Political beliefs and task roles are also major factors in the negotiations of appraisal interview recommendations as they proceed through the hierarchy.

General Summary

This chapter has described and discussed the two Bank decision processes to which the Model is likely to be applied. They are the branch site selection and officer performance appraisal decision processes. Each process has been followed through the Intelligence, Design and Choice segments. It has been noted that these phases are not all equally important and that they do not necessarily occur in a neat sequence. The system elements of Individuals, Banking Philosophies, Task and Environment have been discussed as they interact with the decision processes. As was the case with decision process segments, not all of the system elements were equally important. The differences in opinion, attitude and belief held by officers along these dimensions will affect the interaction of the elements with the decision processes. These differences will be supported by an analysis of questionnaire data reported in the following three chapters, Chapters IV, V, and VI. Finally, the implications of these differences will be discussed in an assessment of Model implementation in Chapter VII.

CHAPTER IV

A Description of the Research Instrument and Analysis of the Opinions Held by Officers of Different Banking Philosophies

Chapter III describes the actual workings of the branch site selection and officer performance appraisal decision processes using the framework developed in Chapter II. The descriptions revealed differences in opinion and belief about many aspects of the Bank and banking. These differences are believed to be reflections of four elements of the Bank's organizational system relevant to the decision processes. Since the objective of the research is to be an assessment of the effects of Model implementation into these decision processes, an attempt was made to expand the explanation of some differences in the four system elements of possible significance to the Model implementation.

This chapter describes the nature and content of a questionnaire developed from interviews with or observations of the nineteen officers listed in Figure 4-1, an analysis of opinion questions concerning general banking issues, and an analysis of opinion questions concerning performance appraisal. The analyses have been undertaken with the objectives of 1) confirming the existence of two banking philosophies held by Bank officers, 2) investigating the differences of opinion on general issues relevant to innovative banking pursuits, one of which could be an environmental simulation, and 3) investigating differences of opinion concerning performance appraisal which are related to differing philosophies

Figure 4-1

<u>Position</u>	<u>Title</u>	<u>Functional Area</u>
Chief Executive Officer	President	top management
Executive Vice President	Executive Vice President	top management
Chief Lending Officer	Senior Vice President	lending
Marketing Vice President	Senior Vice President	marketing
Operations Vice President	Vice President	operations
Branch Administrator	Senior Vice President	branches
Controller	Vice President	staff accounting
Deputy Controller	Assistant Vice President	staff accounting
Personnel Officer	Vice President	staff personnel
Statistician	Vice President	marketing
Regional Vice President, East	Vice President	branches
Regional Vice President, West	Vice President	branches
Branch Manager	Vice President	branches
Branch Manager	Vice President	branches
Branch Manager	Vice President	branches
Branch Manager	Assistant Vice President	branches
Branch Manager	Branch Officer	branches
Branch Officer	Branch Officer	branches
Systems Analyst	Assistant Vice President	operations

and/or some other variable(s). The existence of these differences, reflecting the operation of the organizational system elements, will be used in assessing the Model introduction and predicting some interactions of the Model and the system.

Content and Administration of the Questionnaire

On October 18, 1972, a questionnaire of six basic parts and two adjective sort decks of cards were given to a stratified, random sample of fifty officers of the Bank. The questionnaire was introduced by Professor Gibson at a meeting of all officers of the Bank that morning. All questionnaires were hand delivered that day to members of the sample. Members of the sample were in no way coerced into responding, either in total or to any specific items in the questionnaire. Cooperation was, nevertheless, outstanding, and by November 4, fifty responses had been received out of a sample of fifty to whom questionnaires had been distributed. Advisory copies of the questionnaire had been mailed to the President and Executive Vice President, and these responses were added to the original fifty for a total set of fifty-two responses or observations. This sample represents approximately 40% of the Bank's 131 officers and is believed to be representative of the officer group as a whole.

The sample was stratified by functional area of department because the earlier interviews had led to a strong expectation of different points of view originating in different departments. Whether or not this turned out to be the case, a sample covering all functional area departments would reveal any differences. Within a

department, individuals were drawn at random from a list of officers in that department. There were approximately the same proportion of officers from a department in the sample as there were in the Bank: For example, 18% of the sample is comprised of trust officers, and approximately 20% of the Bank's officers are trust officers. No fewer than five individuals represent any department, however. Figure 4-2 presents a list of numbers of officers in each department and number from each department in the sample.

Figure 4-2

<u>Department</u>	<u>Number of Officers</u>	<u>% of Total</u>	<u>Number in Sample</u>	<u>% of Sample</u>
Trust	26	20	9	18
Lending	20	15.5	7	14
Marketing	10	8	5	10
Operations	13	10	5	10
Central Branches	9	7	5	10
West Branches	20	15.5	6	12
East Branches	14	11	5	10
Headquarters	17	<u>13</u>	8	16
		100		

The sample included officers interviewed previously. Thus the resulting opinion analyses were not based upon a sample completely independent from the interviews. The purpose of the analysis was to further confirm some expected differences in the entire officer group

rather than to explain the differences with any statistical confidence. Since the results were not expected to be statistically powerful explainers of variance in more than an atomistic way, the overlap of interviewed officers and officers in the questionnaire sample was allowed to remain.

The questionnaire consisted of six basic sections: biographic data, job history, sociometric preference questions, general opinion questions, performance appraisal opinion questions, and a set of computer application-related questions. (A copy of the questionnaire, including statistical summaries of the responses, is attached as Appendix B.) It was jointly developed by Professor Gibson and myself with all biographic and sociometric development done by Professor Gibson.

The biographic section included standard questions of age, birthplace, marital status, education, questions of hobbies, outside activities, religion and politics. A total of sixty-two variables were identified in this section.

The Job History section consisted of a description of the current job and previous six jobs, including functional sub-area, position, title, tenure in job, work location and immediate superior. A total of fifty-four variables were identified in this section. (See Appendix B, variables 31-84.)

The Sociometric Preference Section consisted of a set of six questions asking the respondent who in the Bank had the greatest influence upon him, with whom he would like to work on a special

project, have lunch, meet socially, etc. Allowing for multiple answers on some questions resulted in eleven variables being identified in this section. Each person named in this section and in the immediate superior column of Job History was given a three digit number to enable numerical encoding for further analysis such as sorted lists. (See Appendix B, variables 117-127.)

Following the Sociometric section were two sections of opinion questions. First was a set of fourteen questions about banking in general designed to draw out differences in perception among officer subgroups. Second was a set of eight questions concerning performance appraisal. Like the general opinion questions, these were based upon previous interviews and designed to illuminate differences in opinion among officer subgroups. Each of these questions was answerable on a scale from 1 to 7. (See Appendix B, variables 128-149.)

Finally, included in the questionnaire was a single page description of four computer applications with several examples of each application type. Respondents were asked to answer a set of twenty-eight opinion questions for these application types, i.e., there were seven questions, each of which was designed to get some insight into an individual's knowledge and opinion of computer usage in the Bank. While some link to banking philosophies identified early interviews was thought possible, it was generally secondary to an attempt to find some means to determine who or what groups would favor implementation of computer applications and to develop some

strategies and tactics with which to aid in the actual model implementation. As was the case with the opinion questions, the computer-oriented questions were answered on a scale from 1 to 7. (See Appendix B, variables 150-177.)

The adjective sort decks of cards for the City and Region of North Harbor were administered along with the basic questionnaire. Instructions for sorting the decks were appended to the questionnaire following the computer questions. Basically each respondent sorted a deck of fifty cards into five categories running from Most Descriptive = 5 to Most Undescriptive = 1. Two decks, a blue one for the City and a white one for the Region, were enclosed. Each respondent completed one sort for the City and one for the Region. (See Appendix B for a copy of the sorting instructions and for a list of the adjectives.) These adjective sorts constituted another one hundred variables in the final data file generated from the questionnaire.

A total of 277 variables, including one hundred for the adjective sorts, was identified from the questionnaire. These raw data were keypunched and then processed for analysis on the PDP 10-80 time-sharing computer at the Harvard Business School, using the Analysis of Quantitative Data (AQD)¹ statistical package for time-sharing computers.

¹R.O. Schlaifer, User's Guide to the AQD Collection, 2nd ed., President and Fellows of Harvard College, Cambridge, Mass., 1972.

Support for Opinion Questions Used

Interviews revealed some recurring patterns of differences in Bank officers' opinions. These differences were expected to reflect some differences in underlying banking philosophy, i.e., beliefs in what and how banking should pursue and where the Bank fit in.

For example, several officers interviewed talked about the Bank-customer relationship. Some seemed to be calling for loyalty while others called for attracting new customers, acting in their best economic interest. Two vice presidents had the following to say:

- V.P. 1: In banking today it's dog-eat-dog. The competition is worse than it's ever been. With the Columbia banks down here, they are trying to steal accounts from us; we're trying to get them back from them (Columbia banks). It's just terrible, and this rubs me the wrong way, too . . .
- V.P. 2: As a manager, you've got to be concerned about the profitability of the branch. Naturally, you've got to relate your expenses to your income, look for growth, be out on the road calling on prospects, look for new customers, and keep people happy.

From statements such as these questions 131 and 133 were developed:

- 131 In the face of competition from other banks, we should expect considerable loyalty from our commercial customers.
- 133 When dealing with household customers we should expect considerable loyalty in the face of competition.

Similar differences appeared sufficiently often to evoke other questions directly. A few questions were then added to test expectations. Tests were not meant to be primarily statistical but were to check a large number of responses against descriptions developed in interviews.

Differences in opinion were also apparent during discussions of performance appraisal interviews. Some officers wanted to be evaluated on effort and devotion to their work and to the Bank, while others wanted quantified objectives to underlie their evaluations. The two vice presidents referred to above described their beliefs as follows:

V.P. 1: I think sometimes there is entirely too much placed on the manager; too much as far as profitability is concerned. . . . I think they do probably recognize dedication and length of service, but I think sometimes, too, they move a little bit too fast in the area of responsibility.

V.P. 2: We have no goals! I have no goal. . . . You've got to give a man a goal. . . . If the management of the Bank comes out here and says there's five million dollars more you should get in demand deposits next year and I say 'You're crazy!' they should be able to show me why, and we can kick it around and come up with a mutually acceptable goal. You have a little more of a measuring tool.

These opinions and similar ones expressed by managers and regional vice presidents led to the inclusion of question 143, concerning quantitative standards, and question 145, concerning appraisal based upon effectiveness, into the questionnaire.

Summary of Questionnaire Development and Purpose

The questionnaire was developed to confirm and explore differences in opinion reflecting some organizational elements in the Bank. These elements have been previously described as affecting the decision processes in which the Model is to be used. The differences in opinion and belief will, therefore, affect the Model implementation into those processes. The questions used were derived in part from a series of interviews with Bank officers and in part from the researchers' insight into some aspects of Bank operations. Questions involving computer applications were designed to assess attitudes toward various classes of computer application.

Confirmation of Different Banking Philosophies

The major analysis has revolved around some corroboration of two general banking philosophies believed to underlie many differences in opinions concerning general banking issues and performance appraisal. The discussion of the branch site selection and performance appraisal decision processes revealed two basic groups with differing approaches to banking - labeled Bankers and Marketers. These groups were not depicted as actual social groups but rather as potential groups of like thought. The remainder of this chapter will be devoted to establishing some Index capable of measuring the degree of an officer's belief in one of these groups or the other and the evaluation of differences of opinion between officers strongly associated with each philosophy.

Initial, univariate exploration of the questionnaire data along the dimensions of age, education or current job failed to provide a clear picture of any political groupings. The differences in viewpoint which were expected to relate to two banking philosophies were thought to have roots in a number of dimensions rather than a single dimension such as current job or age.

A major contributor to explaining differences in philosophy was thought to be an officer's job history in the Bank. Attitudes prevalent in different departments are caused by members of those departments. The reporting relationships of a department were also felt to be important. The structural split of the Bank at the top was thought relevant. Members of departments reporting to the Executive Vice President were expected to tend toward a Marketer philosophy while members of those departments reporting to the President were expected to tend toward a Banker philosophy. (See Appendix A for an organization chart.) Within the branch administration, officers in the East Region were expected to tend toward a Marketer philosophy due to the influence of their "Outsider" regional vice president. Officers in the West Region were expected to tend toward a Banker philosophy due to the influence of their "Insider" regional vice president.¹

¹See C.F. Gibson, "Evolution of the Social System in a Bank," unpublished paper, Harvard Business School, January 1973, for a detailed summary of these background determinants of political groups.

Gibson pursued the origination and growth of the Orientation Program and found it to be another contributor to the different banking philosophies.¹ Begun in 1957 as a result of a major study of the Bank's informal organization, the Orientation Program was intended to attract a "new type" of young, college-educated, aggressive person to the Bank and to keep him with enlarged responsibility, rapid promotion and competitive salaries.² By 1969 the Orientation Program had had fifty-five graduates. While it had succeeded in bringing in "new types," it had also brought dissension to the ranks of the Bank's officers and, at that time, was viewed as a polarizing catalyst for opinions and the source of suppressed conflict.³

In addition to these primary contributors, several auxiliary contributors were believed to affect development of two different banking philosophies. These contributors are a college degree, an analytic major for that degree, political affiliation, and number of years at the Bank. Each of these auxiliary contributors is loosely aligned to current job or the events involved with the Orientation Program, but each adds some shading to a composite

¹Ibid.

²Chris Argyris, "Human Relations in a Bank," Harvard Business Review, Sept.-Oct. 1954, p. 67. Argyris identified a "right type as quiet, passive, obedient, cautious and careful." To survive at the Bank at that time required an individual to be a right type. To change, among other suggestions, a "new type" was needed.

³Clayton Alderfer, from his final report to the Bank, July 1969.

variable which can capture the several dimensions of differing banking philosophies.

No single variable in the questionnaire or primary contributor to banking philosophies was believed to capture the characteristics of a Banker or a Marketer. Some transformation of the available data was required to obtain a rough scale of measuring differences between the two. The transformation chosen was an Index constructed by adding together weights assigned to each level of the component variables in the Index. It was derived from eight independent variables, each level of which was assigned a weight or index score. These index scores were then added to yield a total index number. The index number of an individual, then, reflects the presence or absence of a joint set of properties which were expected to be representative of Bankers and Marketers. The specific variables used in constructing the Index were Current Employing Unit, Immediately Preceding Employing Unit, Age, Total Years at the Bank, Participation in the Orientation Program, College Degree, Type of Major in which College Degree was Earned, and Political Party Affiliation. Details of index construction are contained in Appendix D.

Individuals with low Index scores were considered Bankers and individuals with high Index scores were considered Marketers. Three indices were developed sequentially. An attempt was made to keep the Index uncontaminated by corroborating the differences between groups without comparing the Index to any opinion questions.

Corroboration consisted of checking those sample members previously believed to be either Bankers or Marketers with individuals' location along the Index.

Index Verification

The Index scores for officers in the sample are contained in Figure 4-3. The actual weights assigned for each of the component variables for each officer are also listed. The maximum score, representing an individual whose component variable scores are each in the highest category is, 7.5. An individual near this end of the index range would be a strong Marketer. The minimum score is zero, representing an individual whose component variable weights each had a value of zero. An individual near this end of the index range would be a strong Banker.

The main check of the usefulness of the Index as a method of differentiating officers likely to be Bankers from those likely to be Marketers was to compare a set of eight officers previously believed to be Bankers and another set of ten previously believed to be Marketers with their Index scores. Some statistical significance was found for the Index's "goodness" of fit to a hypothesis (see Appendix D), but it was not strong. The Index misplaced only one of one officer in halves but did not do so well when the scale was cut into fifths. Generally, however, the Index placed officers toward the ends of the scale predicted from prior expectations.

Figure 4-3

Index and Its Components

1 INDEX3									
2 ID NO.									
3 SUMJOBSORE									
4 POLITICSWT.									
5 ORIENTSPLIT									
6 AGE WT.									
7 YRS ATEANKSPLT									
8 COLDEGREE 0=NON									
9 MAJORANALYT									
OBS	1	2	3	4	5	6	7	8	9
50	0	25	0	0	0	0	0	0	0
18	0	29	0	0	0	0	0	0	0
19	0	40	0	0	0	0	0	0	0
32	0	8	0	0	0	0	0	0	0
23	0	45	0	0	0	0	0	0	0
37	250	13	250	0	0	0	0	0	0
1	500	4	0	5000	0	0	0	0	0
12	500	30	0	5000	0	0	0	0	0
2	750	6	0	2500	0	5000	0	0	0
34	750	10	0	2500	0	5000	0	0	0
48	1000	17	0	0	0	0	0	1	0
46	1000	25	0	5000	0	5000	0	0	0
40	1000	16	0	0	0	0	0	1	0
14	1000	33	0	0	0	0	1	0	0
30	1000	5	0	5000	0	5000	0	0	0
22	1000	43	0	0	0	0	0	1	0
6	1500	44	1500	0	0	0	0	0	0
43	1500	21	1500	0	0	0	0	0	0
28	1500	2	1500	0	0	0	0	0	0
27	1500	1	0	5000	0	0	0	1	0
26	1500	51	0	0	0	5000	1	0	0
9	1750	24	1750	0	0	0	0	0	0
4	2000	27	1500	5000	0	0	0	0	0
45	2000	23	1500	5000	0	0	0	0	0
10	2000	26	1500	0	0	5000	0	0	0
42	2000	20	1500	5000	0	0	0	0	0
29	2250	3	750	5000	0	0	0	1	0
49	2500	32	0	0	1	5000	0	1	0
44	2500	22	1500	5000	0	5000	0	0	0
13	2500	31	0	5000	0	5000	0	1	5000
17	2500	38	1500	5000	0	5000	0	0	0
31	2500	7	0	5000	0	5000	0	1	5000
33	2750	132	1500	2500	0	0	1	0	0
11	3000	29	3000	0	0	0	0	0	0
15	3000	34	1500	5000	0	0	0	1	0
21	3250	42	0	2500	0	5000	1	1	5000
5	3500	28	1500	5000	0	5000	0	1	0
8	3500	49	3000	5000	0	0	0	0	0
41	3500	19	0	5000	0	5000	1	1	5000
24	3500	47	1500	5000	0	5000	1	0	0
52	3750	52	2250	5000	0	0	0	1	0
47	4000	37	3000	5000	0	5000	0	0	0
39	4000	15	3000	5000	0	5000	0	0	0
36	4000	12	0	0	1	5000	1	1	5000
20	4500	41	3000	5000	0	0	0	1	0
51	5000	46	1500	0	1	5000	1	1	0
7	5000	50	1500	0	1	5000	1	1	0
38	5000	14	1500	5000	1	5000	0	1	5000
25	5000	48	3000	0	0	5000	0	1	5000
16	5250	36	1250	5000	1	5000	1	1	0
3	6750	18	2250	5000	1	5000	1	1	5000
35	6750	11	2250	5000	1	5000	1	1	5000
DEC. PT	-3	0	-3	-4	0	-4	0	0	-4

Figure 4-4 lists the identification numbers of officers classified prior to index construction and their index placement by fifths of the Index. For purposes of analysis the eleven highest scoring and ten lowest scoring officers (approximately top and bottom fifths) were designated Marketers and Bankers respectively.

Figure 4-4

Comparison of Officers Previously Classified to their Index Position

<u>I.D. number -</u> <u>Previously</u> <u>Classified</u> <u>as Bankers</u>	<u>Index</u> <u>Position</u>	<u>I.D. number -</u> <u>Previously</u> <u>Classified</u> <u>as Marketers</u>	<u>Index</u> <u>Position</u>
2	Second 1/5	11	Highest 1/5
8	Lowest 1/5	12	Highest 1/5
17	Lowest 1/5	15	Highest 1/5
20	Third 1/5	18	Highest 1/5
21	Second 1/5	24	Third 1/5
35	Lowest 1/5	28	Fourth 1/5
40	Lowest 1/5	37	Highest 1/5
45	Lowest 1/5	49	Fourth 1/5
		50	Highest 1/5
		52	Fourth 1/5

Key: Lowest 1/5, second 1/5, third 1/5, fourth 1/5, highest 1/5.
Bankers Middle Marketers

One individual, known to be a strong Marketer and currently Senior Vice President, Marketing, scored below the median, however. He was the only individual about whom prior knowledge led to classification of Banker or Marketer who was not correctly placed by the Index to align with his banking philosophy. This may be at least partially explained by 1) his switch in jobs less than two years ago from Operations to Marketing, and 2) by his age and lack of a college education. While it must be admitted that the Index may not place others like him into groups which they actually

support, the weakness is not considered particularly severe. The total list of Figure 4-3 is convincing enough to warrant using the Index as the measure of banking philosophy against which differences of opinion will be measured.

A second check of the Index was scrutiny by the Bank's President and Executive Vice President. On March 21, 1973, Gibson presented the data and assumptions behind the construction of the Index to these officers. They greeted it enthusiastically and generally agreed both with the existence of different philosophies (Gibson referred to them as types A and B) and the items contributing to the Index construction. Gibson was invited back to present the same information to all officers of the Bank.

Thus while the Index is not strongly supported statistically, it has been confirmed intuitively by both Bank management and this research. While it is not expected to explain major portions of variance in responses to opinion questions, it is expected to differentiate sufficiently well for the purpose of assisting an assessment of Model introduction into site selection and performance appraisal.

Several attempts at sociometric analysis proved to be of little use. While it was possible to confirm that Bankers did not choose Marketers for special projects and vice versa, other results were very unclear. This finding lends some support to the notion that officers of the two philosophies are not members of social groups but rather are members of potential groups of like-thinkers.

While they may tend ceteris paribus to choose others who share a common banking philosophy, variables such as work relationships, age and rank groups, and home location dominate social choices.

Analysis of General Banking Opinions
on Banking Philosophies

Having developed an Index capable of identifying Marketers and Bankers, the next step was to confirm that there are, indeed, important differences of opinion between the groups both on general topics and performance appraisal. Since it was not believed that every officer in the sample (or in the Bank) was firmly committed to a single banking philosophy, the decision was made to divide the Index into three groups. Officers whose Index score was 4.0 or greater were designated Marketers (approximately the top 1/5) and those whose score was less than 1.0 were designated Bankers (approximately the bottom 1/5). The remaining 31 were labeled the Middle group.

The opinion questions concerning general banking issues and performance appraisal were examined to ascertain whether or not there were some predictable patterns of opinion representative of of Banker and Marketer philosophy. A complete discussion of the formal analysis undertaken is contained in Appendix D1. Those differences important to assessing the effects of Model implementation are discussed here.

The prior expectation was that officers strongly favoring one of the two banking philosophies would hold different opinions in four areas relevant to the eventual implementation of the Model. These areas were 1) opinions concerning the use of computers in general, 2) opinions concerning the nature of customer behavior, 3) opinions about the Bank and their own jobs, and 4) opinions concerning competition and appropriate ways to meet it.

Use of Computers in General

Since the Model is computer-based, some overall sense of officers' opinions about its fit in the organization were solicited. A group believing that computers were better used for low level data processing than for the provision of information for decision processes may be more difficult for an implementor to work with than a group not holding such opinions would be. Bankers were expected to be more in agreement with the statement that, "Computers are at their best when used for routine operations" than were Marketers. Bankers were also expected to opine that "a little knowledge about computers was a dangerous thing." These expectations were confirmed in both cases. (See Appendix D1, questions 130 and 132.) It was also confirmed that those officers not strongly in one camp or the other held an opinion on average not as strong one way or the other concerning the questions. More detailed questions concerning computer applications will be discussed in Chapter V. The finding from

these two questions serves only to substantiate a general feeling that Bankers think computers are useful in routine operations when run by users with a lot of knowledge about them.

The Nature of Customer Behavior

The Model is going to be used to generate data about current and potential customer behavior. It will be used in processes (both site selection and performance appraisal) where a major intent will be to pursue new customers and fulfill the potential in a given area. Officers perceiving customer behavior as based upon loyalty to the Bank instead of some personal economic or service requirements may be less likely to grasp the implications of Model output and may ignore it. Insider branch officers who consider people to be customers only as they enter the door may also ignore a Model based upon potential customers in an area. A prior expectation that Bankers would expect customer loyalty more than either the Middle group or Marketers would, was borne out. In responses to statements that "we should expect considerable loyalty from our household and commercial customers" Bankers strongly agreed. (See Appendix D1, questions 131 and 133.) This finding further supports a belief that Bankers are traditionalists who view their customers in a traditional manner.

Feelings About Individual Jobs

In general some dissatisfaction with job and Bank was expected among Marketers. This dissatisfaction was believed to provide some rationale for their wanting to participate in changes. The

findings in this general area were not as clear as those already discussed. Bankers averaged very high in their opinion that their job "was a good one" (6.8 of a possible 7.0). Marketers' responses were sufficiently lower to be statistically significant (6.27) but much higher than anticipated and not substantively different from Bankers. The Middle group responded lowest (6.19). It must be concluded that all officers in the sample thought their jobs were good.

The tight promotion situation, a slowdown in growth and the merger were all believed to have contributed to a sense of dissatisfaction revealed among several branch officers and systems analysts during interviews. Marketers were expected to be and were most dissatisfied. Their average score, however, was only 2.4 on a scale of 1 to 7 in response to the statement, "This organization is not a good place to work." Bankers were even more in disagreement with this statement than Marketers. The only conclusion that may be drawn is that Marketers are relatively more, but not strongly, dissatisfied with the Bank than are Bankers. Parallel to the levels of dissatisfaction with the Bank, Marketers are less optimistic than Bankers about their careers. (See Appendix D1, question 141.) This may be some support for expecting them to aid Model implementation but only if the Model is perceived as being favored by senior officers who can alter a subordinate's heretofore pessimistic expectations.

Perhaps the most important finding about job opinions was the confirmation of an expectation that Marketers did not feel as "fully informed" about their jobs as would Bankers. Bankers felt relatively well informed, averaging 5.4 on a scale of 1 to 7. (See Appendix D1, question 138.) This feeling on the part of Marketers that they were not kept informed supports the notion that a desire for more information would lead them to use the Model, a source of much job-related information in at least one dimension of banking.

Competition and Ways to Meet It

Sampled officers universally agreed that, "Commercial banking is facing an increasingly competitive era" (Appendix D1, question 128). The group average scores ranged from 6.73 to 6.84 on the 1 to 7 scale. This finding is interesting in that it illuminates an awareness among Bank officers that complacency will not do in tightened times ahead.

There is a wide range of opinions, however, in response to the statement, "I am optimistic about the performance of this Bank over the next five years." The Bank has kept to a traditional course up to this point. The merger is the latest step taken to strengthen its traditional foundation. Because of this traditional posture, Marketers were expected to be much less optimistic about the Bank's future than were Bankers. Such was the case. Bankers averaged a relatively high 5.6, while Marketers averaged only 4.2 in response to this statement. Interviews revealed that Marketers perceived a changing environment for North Harbor banking. They

believed the Bank was declining during this change. The response to this statement adds support to the belief that Marketers will look to innovative pursuits to increase the Bank's prosperity.

Responses to specific statements of how the Bank must compete in a competitive environment were not as clear as they were to more general statements. Marketers were expected to strongly favor "new ways" of making money, and Bankers were expected to clearly favor "more of the kinds of business we are already good at." In fact, Bankers did favor more of "what we are good at" and Marketers did favor "new ways" in a sense relative to other groups. The differences, however, were not very great and were further clouded by the Middle group's responding that they favored less of either way than did Bankers or Marketers. (See Appendix D1, questions 134 and 135.) The conclusion is that officers strongly committed to one philosophy or another want some action. They may favor new or old ways but will settle for some action. Those in the Middle group are less involved in pushing the Bank and want to wait things out.

In conclusion, opinions on the state of competition and ways to meet it indicate that while most officers perceive heightened competition, they are split on the issue of Bank performance against that competition, Bankers thinking in more optimistic terms than Marketers. With regard to specific steps to take to cope with competition, Bankers slightly favor traditional ways and Marketers slightly favor new ways. Those in the Middle favor less of either

type of action than Bankers or Marketers. The implications of this set of findings for Model implementation seem to be that Marketers will favor the Model as a new way to cope with competition in a future that is not very optimistic using traditional methods. This statement cannot be extended to say that Bankers will oppose the use of the Model. With respect to general "ways of making money" Bankers are less inclined to "new ways" than Marketers. Nevertheless, they did score 6.7 on a 1 to 7 scale, indicating support for new as well as old ways.

The responses to specific approaches toward "making money" were quite interesting. (See Appendix B, questions 134 and 135.) Prior expectations, as have been already stated, were that Bankers would clearly favor current ways while Marketers would clearly favor new ways. Since the Model is a "new way," the interest of a distinguishable class of officers in new ways would be helpful during implementation. When different philosophies failed to elicit clear or great differences in opinion, some alternative explanatory variables were sought. Neither different age groups nor different departmental memberships reflected any appreciable differences or clear patterns in opinion concerning new or current ways to make money.

Differences in rank were expected to provide some clear distributions, i.e., junior officers were expected to favor new ways more than senior officers were and vice versa. Such was not the case. Junior officers (those ranking below vice president) and very

senior officers (senior vice president and up) both favored "new ways" more than the seventeen vice presidents in the sample. The reverse was not quite true for "current" ways. Vice Presidents did favor current ways more than other groups, but junior officers responded much less favorably than very senior officers to the question. Figure 4-5 summarizes the differences.

Figure 4-5

Differences in Scores Concerning Ways of "Making Money"
(variables 134 and 135)

	New Ways		Current Ways	
	Avg. Score	n	Avg. Score	n
Asst. V.P. or junior	6.76	29	5.36	28
V.P.	6.47	17	6.24	17
Sr. V.P. or higher	7.00	6	6.00	6

Overall, "new ways" received more positive responses than "current ways." This may mean the Bank wants innovation. More likely, however, the implicit cultural value attaching to "new" is probably inflating these response scores. In retrospect the question cannot be considered from an absolute point of view but rather must be used only to examine some relative patterns. The reality of Bank operations does not currently include much innovative activity, no matter how high the responses to the question.

Summary of Results of Responses to Questions Concerning General Banking Issues

With respect to differences in banking philosophy alone, the Model builder should not expect hostility from Bankers or a Middle group. From groups other than Marketers, however, he may

expect some apathy. Bankers tend to think computers are best at routine work when dealt with by very knowledgeable people. They believe strongly in loyalty as a basis of customer behavior. The Middle group, while less than highly optimistic concerning the Bank's future, wants to avoid aggressively seeking out new or old ways to make money.

Dissatisfaction with either Bank or job cannot be expected to be a group stimulus to use a model. While Bankers are more satisfied with both, the overall level of responses indicates that everyone is fairly satisfied. Not everyone is optimistic, however. Marketers are sufficiently less optimistic of the future than Bankers for them to seriously look for assistance in remedying the situation. Marketers slightly favor new, innovative ways to make money when compared to Bankers, and both favor new and old ways highly.

Marketers feel that they need more information about their jobs than do Bankers. The Model will supply Marketer-oriented information. This finding further supports introduction through Marketers. In general Bankers will not oppose the Model, but findings here indicate that they will generally be apathetic.

An Analysis of Responses to Statements Concerning Performance Appraisal

Just as strong differences in opinion on general banking issues were thought to exist between Bankers and Marketers, so were they thought to exist in opinions on performance appraisal. Performance appraisal was an area in which the Bank had expressed

interest in using some aspects of the environmental model.

Specifically, some objective measure of branch area profit potential was sought. Also, the Branch Senior Vice President wanted to know how various segments of the Region were likely to change in the next five to ten years.

A generalized expectation was that there would be many differences in opinion on issues concerning format, substance and administration of the performance appraisal system. A further expectation was that these differences would be predictable between political groups, with Marketers favoring quantitative goals, task-specific formats, evaluation based on effectiveness, and a focus on discussion of an individual's managerial weaknesses for the purpose of further improving effectiveness.

Results of cross-tabulations of opinions against the banking philosophy groups were not at all conclusive. While four sets of opinions conformed at least partially to expectations, it was quite clear that differences in banking philosophy were not the dominant explanatory variable for differences of opinions about performance appraisals. An officer's immediate superior is believed to be as or more important than differences in philosophy.

As expected, Bankers did prefer a standardized format more than Marketers. The Middle group agreed with Bankers on this issue, leaving Marketers as the only group urging less standardized forms. Bankers also thought less of being evaluated on "how well they do their job" versus "how hard they have worked" than did Marketers,

but overall averages were all above 5.2 on a scale of 1 to 7. (See Appendix D2, questions 142 and 145.) In this case the Middle group sided with Marketers, leaving only Bankers feeling that being evaluated on hard work may be more to their liking than output evaluation. The majority seems to favor a standardized, output oriented appraisal.

Having confirmed that Marketers favored less standardization and more output orientation of appraisals than Bankers, it was strongly expected that they would much more prefer the use of quantitative measures. Not so! Bankers and Marketers scored virtually alike in response to the statement, "The nature of a typical Bank officer's work makes it inappropriate to appraise him against budgeted goals or similar quantitative standards." The scores were not very high (3.4), indicating that quantitative measurement is not an issue closed to consideration but they do indicate that banking philosophy is not a useful characteristic to explain a preference for quantitative standards. (See Appendix D2, question 143.)

Differences in banking philosophy were related to the opinions concerning the relationship of the appraisal interview to a raise or promotion. Marketers believed there should be a strong relationship, and Bankers were much less of that opinion. (See Appendix D2, question 148.) The Banker opinion is another reflection of their traditionalism.

The banking philosophy dimension provided some predictable differences of opinion to the issue of format, output orientation of the appraisal, and relationship of the appraisal interview to the

ultimate raise or promotion. The Model's use in performance appraisal may tend to reduce standardization, at least in the branch areas, by allowing individualized negotiations of annual objectives. The Model will definitely emphasize output orientation and will make it difficult to separate too far the interview negotiation results and ultimate raises and promotions. While there is little statistical support for these findings to be anything but random comparisons, there is strong intuitive and contextual support gained from interviews in the Bank.

There is no doubt, however, that some other variables underlie the differences in performance appraisal opinions. First is that for some aspects of performance appraisal a majority of officers holds one opinion while a small minority holds another (Appendix D2, questions 142, 145, 146). Marketers feel differently about format and hearing from their boss than does the majority, while Bankers feel differently about being measured on their performance rather than on their hard work or seniority. The present system appears to aim at capturing the majority approval. The same format is used for everyone. Everyone is supposed to be evaluated on how well he performs, and everyone hears directly from his boss. The extremes, as might be expected, show some dissatisfaction to a compromise system. While Marketer dissatisfaction could possibly be alleviated by some use of an environmental model, Banker dissatisfaction would only be heightened and, indeed, the majority could become dissatisfied since they accept the status quo.

The second interesting consideration is the part the evaluating superior may play in forming opinions about performance appraisal. Only the branch regional vice presidents, known from interviews to have different styles, have sufficient subordinates in the sample to investigate this consideration. The Eastern Regional Vice President tends to be an Outsider and is very aggressive in conducting evaluations. In an interview he related the following incident as an example of his feelings:

I had a session a couple of years ago that ran over four hours with an individual . . . We got up to the end. I was going to rate him a 1.5 and he was fighting for a 2 on the last item. He was of the opinion that he wanted to get 40 points; that is, he wanted 40 points overall. He didn't get it! He got 39.5 because I just stood my guns. But many another supervisor would have given him 40.

While the Eastern Regional Vice President, an Outsider, was very impersonal and objective in his evaluations, the Western Regional Vice President was more personal and supportive, often comparing a subordinate to himself. During an evaluation of one of his managers, he was prone to make comments like:

I think you and I are pretty much from the same cloth. We know what we want to say, but sometimes it's difficult to express it. I don't think either one of us would carry the handle of super salesman, but I just think that your ability is more than adequate.

As may be expected, the average response of East and West Region managers varies to reflect these personal differences in the regional vice presidents. Figure 4-6 presents a summary of the scores for these groups on questions 143, 144, 146 and 149.

Figure 4-6

Average Responses of East and West Branch Officers
to Performance Appraisal Statements

		East		West	
		n	Avg.	n	Avg.
143	The nature of a typical Bank officer's work makes it inappropriate to appraise him against budgetal goals or similar quantitative standards.	4	2.0	7	2.71
144	Taking part in a performance appraisal interview is an uncomfortable experience for me.	4	2.0	7	2.71
146	An officer should hear about his performance directly from his boss.	4	7.0	7	6.86
149	Personality likes and dislikes should not enter into a performance appraisal.	4	4.75	7	6.14

From Figure 4-6 some aggregate statements may be made.

First, as expected, group scores differed to fit the evaluating superior in three of four cases. For question 146 the difference was small, but it is interesting that all four East Region managers scored a perfect seven in keeping with the policy of their blunt, "say it like it is" boss. Second, East managers score strongly in favor of quantitative standards (a low score of 2.0 on a negatively worded question) and, because their boss tends to depersonalize the appraisal interview, do not feel as uncomfortable during one as do West managers. Conversely, East managers score lower than West on thinking personalities should enter into appraisal. They may be willing to lose some comfort in order to gain some personalization of the appraisal interview. Third, West managers do agree relatively

more that quantitative standards are inappropriate, a feeling shared by their boss, and feel more uncomfortable during the interview, perhaps because it was a personal experience. They strongly agree that personalities should not enter into the appraisal interview and may want to reduce some of the uncomfortable feeling.

Performance Appraisal Opinion Summary

Differences in banking philosophies are clearly not a major explanation of differences of opinion concerning performance appraisal. An officer's immediate superior is equally or more important.

In general, the sample majority favors an output oriented, standard format for appraisal interviews. Quantitative measures are not strongly sought but, neither are they strongly opposed by all officers. Bankers differed from the majority in favoring an appraisal based more upon effort than output, and Marketers differed favoring less standardized format. There was no majority favoring a close link between the appraisal and the raise or promotion. Marketers favored this circumstance more than Bankers.

For the sub-sample of branch officers reporting to the regional vice presidents previously interviewed, differences in the propriety of quantitative standards and the personal aspects of appraisal interviews realistically reflect differences in the vice presidents' appraising style. This finding lends considerable support to the prior belief that an officer's evaluator is a big

influence upon his opinions regarding performance appraisal. This finding also points to the East branch officers as a group with which to begin using the Model as an aid to evaluation.

General Summary

This chapter has discussed the administration of a questionnaire and subsequent analysis to 1) construct an Index of different banking philosophies, 2) evaluate differences of opinion on general banking issues held by Bankers and Marketers groups along the Index, and 3) evaluate opinions of these groups concerning performance appraisal.

Opinions on general banking issues were found to vary predictably in areas of some importance to Model implementation, namely, opinions concerning the use of computers in genera, opinions concerning the nature of customer behavior, opinions about the Bank and jobs, and, to a lesser extent, opinions concerning competition and appropriate ways to meet it.

The relationship of banking philosophy to opinions concerning performance appraisal was less clear. While there was some predictable difference in opinion concerning format output measures, and relationship of interview to raise or promotion, other variables, such as immediate superior, seemed to be equally or more important in explaining differences.

CHAPTER V

An Analysis of Opinions and Beliefs Concerning Computer Applications in Banking

The model whose introduction is to be assessed is a computer-based environmental simulation. Familiarity with the officers and decision processes in the Bank has led to the belief that differences in opinions concerning computer applications held by individual officers, officers of different departments, and officers espousing different banking philosophies would affect the success of Model implementation.

Unlike differences in opinion concerning opinions about general banking issues, differences concerning computer applications were not thought to vary only with differences in banking philosophy. The patterns of existing computer use and the current exposure of individuals to computers were also observed to affect opinions and beliefs.

The three identifiers chosen for this analysis were therefore an individual's level of familiarity with a specific class of computer application, the extent to which an individual's department currently used computers and the individual's banking philosophy as defined in Chapter IV. The opinions concerning computer applications were gathered from a set of twenty-eight responses to seven statements about computer usage. Each statement requested responses in each of four application categories: Routine, Operational,

Process Simulation, and Environmental Simulation. The statements may be found in Appendix B, page 10. A brief explanation of each category may be found on page 9 of Appendix B.

Not every set of responses is equally pertinent to Model implementation. Responses to all questions in the Environmental Simulation category were considered valuable as were responses to the following questions in all categories:

We should spend more time exploring the use of program of this type in our Bank.

This type of computer program could help me make decisions in my job.

I would be willing to put extra time into learning about the use of this type of computer program in my work.

A manager making use of this type of program would not need to know what went into the program but just how to read the output information.

Responses to statements referring to development costs and savings were found to differ predictably when compared to an officer's level of familiarity with a computer application, but for other identifiers both expectations and observed differences were rather unclear.

Hypotheses were generated for responses to each of the four statements listed above versus banking philosophy groups as defined in Chapter IV. A detailed description of the analysis is contained in Appendix E.

The nature of the statements in the questionnaire confines discussion of opinions concerning the desire to learn about and use computer applications to an analysis of the relative preferences expressed by members of Index groups. Responses of all Index groups were generally favorable to the Bank's exploring more advanced applications. With the exception of the exploration of operational applications, Bankers always responded less favorably than Marketers to having the Bank explore computer applications. The differences were very considerable for both simulation applications. (See Appendix E, questions 156, 157.) As might be expected, a relatively uninvolved Middle group is most in favor of proven, routine uses and not nearly as much in favor of environmental simulations as Marketers. Marketers, scoring 6.5 on a 1 to 7 scale, are strongly behind the Bank's exploring environmental simulations. This is a fortunate finding because it is in interacting with the market that the Model will provide assistance. This response also fits with Marketers' desires for innovative pursuits.

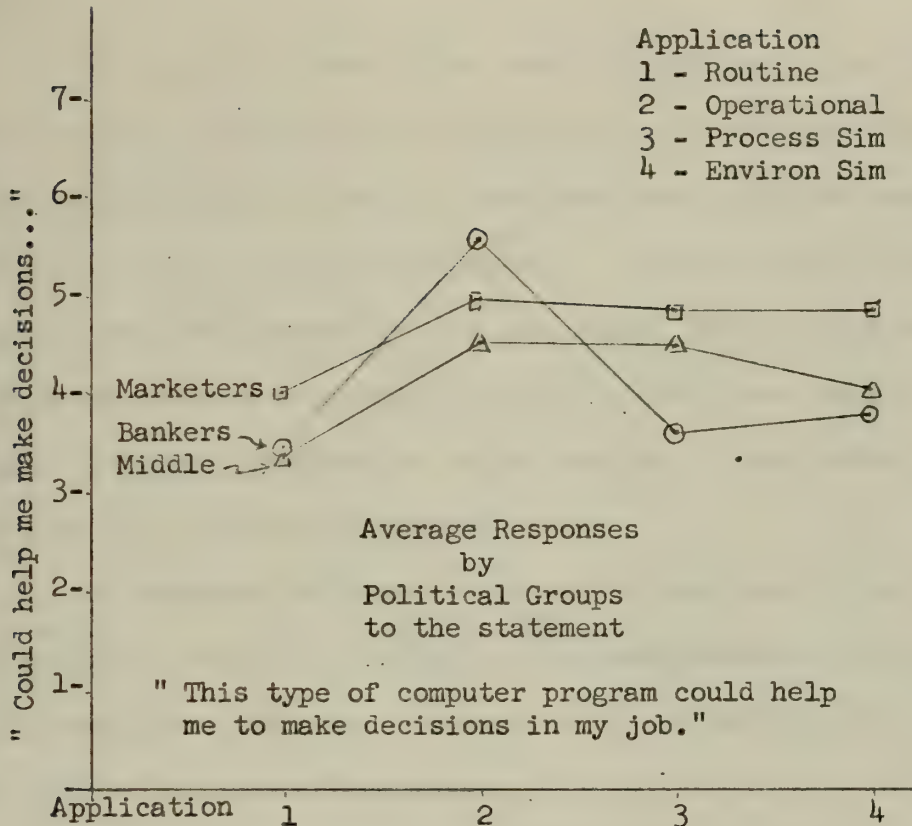
Overall scores did not rise as rapidly with application complexity in response to the statement, "I would be willing to put extra time into . . . " as they did in response to the statement concerning Bank exploration. Only a moderate willingness to spend their own extra time was expressed for routine, operational, and process simulations by all groups, (scores from 3.7-4.7) but for environmental simulations Marketers again scored well above any other group (5.73 compared to 4.58 for Middle and only 3.67 for

Bankers). (See Appendix E, questions 162-165.) This expression further supports the notion that there is a basic philosophy, a Marketer philosophy, which will support the Model.

A very important set of responses is that referring to an application's "help(ing) me make decisions in my job." It is necessary to qualify any results by allowing that advanced applications, especially environmental simulations, will probably not help every job. Some negative responses (low scores) may be honest reflections of the reality of an officer's job. Bankers and Marketers are in most departments, however, and many Bank jobs, e.g., commercial lending, are as sensitive to the local environment as are jobs in branches.

Marketers were expected to score high (believe more strongly) in the helpfulness of simulation applications, while Bankers were expected to score high on routine and operational applications. Marketers did, indeed, score far higher than Bankers for both simulations, but they also outscored Bankers on routine applications. (See Appendix E, questions 158-161.) Bankers outscored Marketers only for operational applications. This could be because several trust and lending software packages are in the operational category, but it could also be related to many variables about which there is no information. Figure 5-1 graphs the responses of the three groups to the "help me make decisions" statement.

Figure 5-1



While the series of expectations concerning application usefulness for on-the-job decision-making was not completely confirmed, the confirmation of expectations for simulations, especially environmental simulations is considered very important. It is an environmental application that is being assessed, not a routine or operational one. It is quite clear that Marketers believe much more in the helpfulness of environmental simulations in decision-making

than do the other banking philosophy groups. This is another strong support for implementing the Model through officers identified as Marketers.

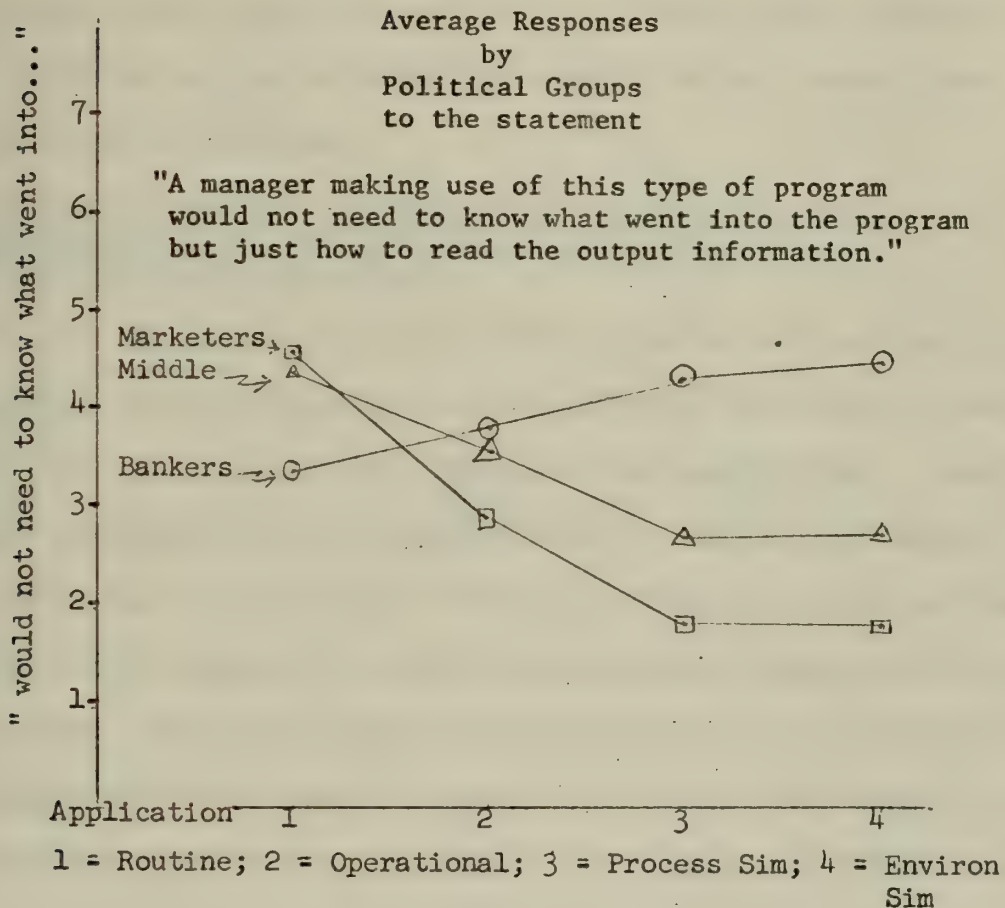
The final statement about which differences in opinion related to banking philosophy were examined was, "A manager making use of this program would not need to know what went into the program but just how to read the output information." Marketers were expected to score lower than Bankers on this statement, indicating disagreement or a belief that a manager did need to know "what went into the program," for every application beyond routine. There was no ordered expectation for routine applications.

As expected, Marketers uniformly scored lower than Bankers. (See Appendix E, questions 170-173.) For environmental simulations, the difference was striking. (Bankers 4.56, Marketers 1.91.) See Figure 5-2 for a graph of responses.

This result is potentially very important to the introduction of any advanced model in the Bank. Briefly, it suggests that a group who is clearly predisposed toward using a model generally supports advanced computer usage and wants to vigorously innovate to increase a somewhat cloudy organizational outlook. Such a group will not settle for manipulating that model's output without knowing some of the model's assumptions and theory and some of its construction. A builder of a very complex model must meet this need by explaining enough of the model workings for this enthusiastic group of potential users to at least know enough to be satisfied. This must be a

difficult position; too much knowledge will not be absorbed, will take much time, and may, in fact, bore the most interested user. Too little may cause potential users to distrust the model.

Figure 5-2



To summarize, of thirteen expected relationships between responses to statements about computer applications versus bank philosophy groups, nine were all or partially confirmed. Marketers seem to favor having the Bank explore environmental simulations more than Bankers do; the same situation exists for spending their own, extra time. Marketers believe environmental simulations are more

helpful in their decision-making than Bankers do. They also believe environmental simulations are more helpful than routine or operational applications. Finally, while they believe in environmental simulations and want their uses explored, Marketers insist on knowing some of what goes into such models. Overall these elements point to Marketers as a group being interested in using, perhaps even anxious to use the Model.

Analysis of Responses to Computer-Related Questions as
Associated with an Individual's Level of Familiarity
with a Particular Application

The second major independent variable analyzed for its effect on computer-related variables scores is the level of familiarity an individual has with the particular application. A general prior hypothesis that increased familiarity with an application would result in predictably different opinions was formulated and tested with statements to which responses might change as familiarity increased. The general averages of responses to the statement "I am familiar with this type of program," as presented in Figure 5-3, dropped monotonically as the complexity of the application rose.

Figure 5-3

<u>Application</u>	<u>Mean Familiarity Score*</u>
Routine	5.86
Operational	4.88
Process Simulation	3.22
Environmental Simulation	2.57

*Scale of 1-7.

This reduction of familiarity as complexity rose at least partially indicates that opinions were substituting for knowledge in computer application statements 1, 3, 5 and 7. To account for level of familiarity, each of the twelve responses to these questions was cross-tabulated with low and high levels of familiarity. High familiarity was defined to be a score of six or seven on question 1, "I am familiar with this type of program." Fewer individuals fit this category as the application complexity rose, not an unexpected finding given the falling average of familiarity in the whole sample. The numbers are as follows: Routine = 38 individuals, Operational = 23, Process Simulation = 9, and Environmental Simulation = 5.

As with earlier analyses of computer application responses, some qualifications to any interpretation of cross-tabulations must be made. Specifically, there is no definite way to know how familiar with an application an officer who responds that he is familiar, really is. Nor is there any control over skepticism as opposed to ignorance upon the part of those not very familiar with an application, i.e., an officer not very familiar could respond that he believed cost savings would be low due to lack of knowledge or due to some skepticism arising from a general distrust of computers. Skepticism could also enter the answer of the sophisticated respondent as well. It is hoped that responses are sincere, knowledge-based replies. The lack of controls, however, makes credibility rather than some powerful explanation the strongest result which can be hoped for.

In general, officers who responded as being very familiar with an application were expected to believe it more helpful for their on-the-job decision-making, capable of generating identifiable cost savings in the Bank (with the exception of routine applications), and sufficiently useful to justify development costs.

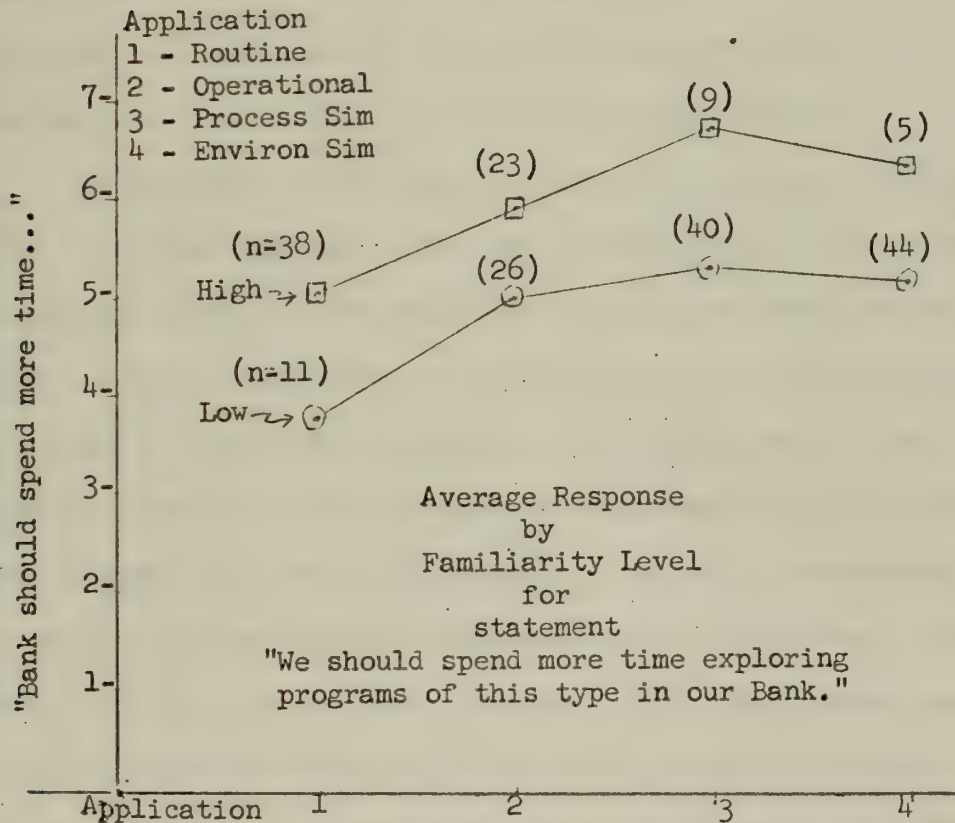
Results of cross-tabulations were about as expected. (See Appendix E1.) Officers familiar with an application consistently believed that application was more helpful for decision-making than the remainder of the sample. Absolute levels of their average responses varied between 4.0 and 5.33 on a 1 to 7 scale with Process simulation viewed as slightly more helpful than Environmental simulation. These responses are not as high as were expected but still indicate that more familiarity raises an individual's belief in an application's utility. Officers very familiar with all applications beyond routine believed more strongly than did the remainder of the sample that they could generate identifiable cost savings and were worth development costs. (See Appendix E1.) The absolute levels of response were all relatively low (averaging less than 3 on a 1 to 7 scale). Since the statements were negatively worded, this level of response reflects rather strong support for the belief that computer applications are worth the costs involved.

To summarize, familiarity has provided some credible but not strong explanation of differences in opinion involving the worth of computer applications. Those individuals more familiar with a

computer application more tend to view that application as useful for decisions and as having benefits exceeding the cost of its use than do officers not as familiar. They also believe the computer applications are worth the development costs.

A link of these beliefs to a measure of the opinion that the "Bank should spend more time exploring . . ." proved interesting. Figure 5-4 presents a graph of responses to this question.

Figure 5-4



Officers responding as more familiar with an application uniformly respond stronger than others that the Bank should explore that application.

As a set, responses to computer application statements divided by a rough measure of familiarity present an intuitively appealing finding. That finding is that officers relatively familiar with an application are more supportive of that application than others. They believe it is more helpful for decision-making, that the Bank should spend more time exploring it, that it will produce identifiable cost savings, and justify development costs. The builder may want to identify and work with these officers.

An important implication which may be of some concern may be drawn from these findings. Officers familiar with an application have expressed opinions from which high aspiration levels may be inferred. A model introduced to the Bank would have to be usable and realistic if these aspirations are to be maintained. Since the opinions expressed by officers familiar with computer applications are very supportive of those applications, including environmental simulations, a builder would probably not want to discourage familiar officers. In this specific case, however, only five officers are very familiar with environmental simulations, so the problem may not be important. If the builder educates users to increased familiarity in the hopes of encouraging pro-Model attitudes, he must take care not to over-inflate aspirations of the newly familiar officers he educates.

Analysis of the Relationship of Current Employing
Department to Computer-Related Variables

The third major independent variable analyzed for its effect on the computer-related variable scores was an individual's current department. In general it was thought that there would be a difference in opinion concerning computer usage depending upon the amount of use the functional department currently had for computers. Individuals in those departments extensively using computers, e.g., Operations and Headquarters staff, were probably going to be more familiar with their various applications, generally believe in their usefulness for decision-making, desirous both that the Bank explore their usefulness further and that they become more knowledgeable themselves, and hold the opinion that knowledge of a program was necessary if its output were to be useful. Individuals in those departments not using computers to any appreciable extent, e.g., Trust and Lending, were thought to be less familiar with their applications, probably less sure of their usefulness for decision-making, and less of the opinion that knowledge of a program was necessary if its output were to be useful. In low computer use departments, there was no prior feeling for the opinions of individuals concerning whether or not the Bank should explore various computer applications or whether they as individuals should spend extra time trying to learn about computer applications. Some variance in response was believed to exist within this group, which was probably more capable

of being explained in terms of overall political affiliation or individual affinity for analytic devices and processes than in terms of functional department.

To investigate these expected differences, the functional departments were divided into three groups - extensive computer users, non-computer users and others. "Others" could be viewed as intermediate users of computers, but the general prior feeling was that there would be less interpretability in the pattern of "others" responses when compared to patterns expected from the user/nonuser group split. Figure 5-5 presents a list of categories and the departments in those categories.

Figure 5-5

<u>Category</u>	<u>Departments</u>
Extensive Users	Operations Headquarters
Nonusers	Trust Lending
Others	Marketing Branches

These departments were classified from experience with the Bank rather than from any questionnaire data. Operations embodies all of the routine data process in the Bank, including bookkeeping and check processing. It also includes a computer systems and research group, tasked with developing new computer uses, and is responsible for an ordering and billing system for fuel oil dealers

in the northeastern United States. Headquarters staff includes the Bank's own auditors and investment officers, the controller and accounting departments, personnel, an international department and the security forces.

Trust is tasked with administering personal, corporate and labor union trust funds. Most of its officers are portfolio managers. Lending deals with all commercial mortgage and personal loans, including administration of the BankAmericard plan. It is also responsible for credit services.

Marketing includes business development, advertising and public relations. The Bank Statistician, a vice president, is attached to Marketing. His task is to project business potential and gather data concerning new bank sites. Branches are tasked with staffing, administering, and developing business for the Bank's twenty-one branches, from small, one-officer storefronts to large, well-established and semi-independent banks in neighboring communities.

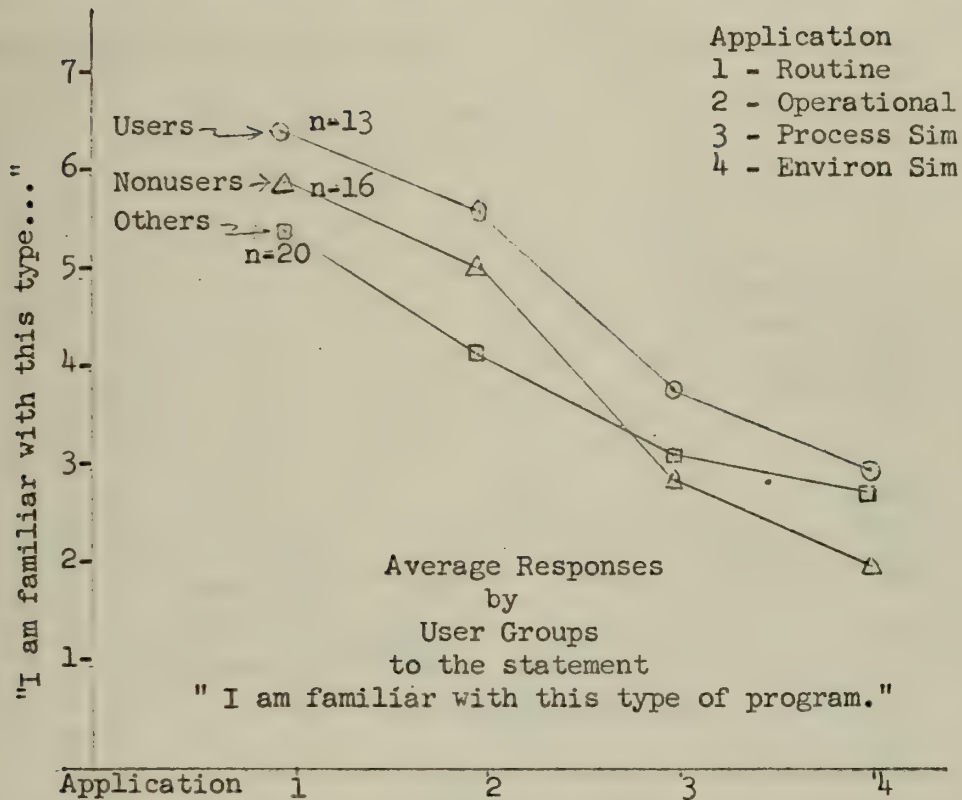
Using these department classifications, the computer-related variables were cross-tabulated against departments. It was hoped that questions such as the following could be answered:

- 1) With which applications are users more familiar than nonusers?
- 2) Do extensive users perceive applications currently being used as those on which the Bank should spend more time, or do they want more time spent (relatively) on simulation applications?

- 3) Which applications do nonusers feel should be explored relatively more?
- 4) Which groups want to spend their own extra time on which applications?
- 5) Are there any differences in opinion about the need to know what is inside a program which can be related to a group's opinion on applications which the Bank should explore, are more helpful for making decisions, or with which the group is familiar?

As was expected, individuals in those departments currently using the computer were consistently more familiar with all four applications than were individuals in the nonusing departments. Only for Routine applications, however, is the average score of the user departments (6.46) sufficiently high to exceed the cutoff criterion for individuals in the high familiarity category (5.9). While officers in user departments express themselves as consistently more familiar with each computer application, relative to officers in nonuser departments, they do not express themselves as highly familiar with applications beyond Routine. (See Figure 5-6.)

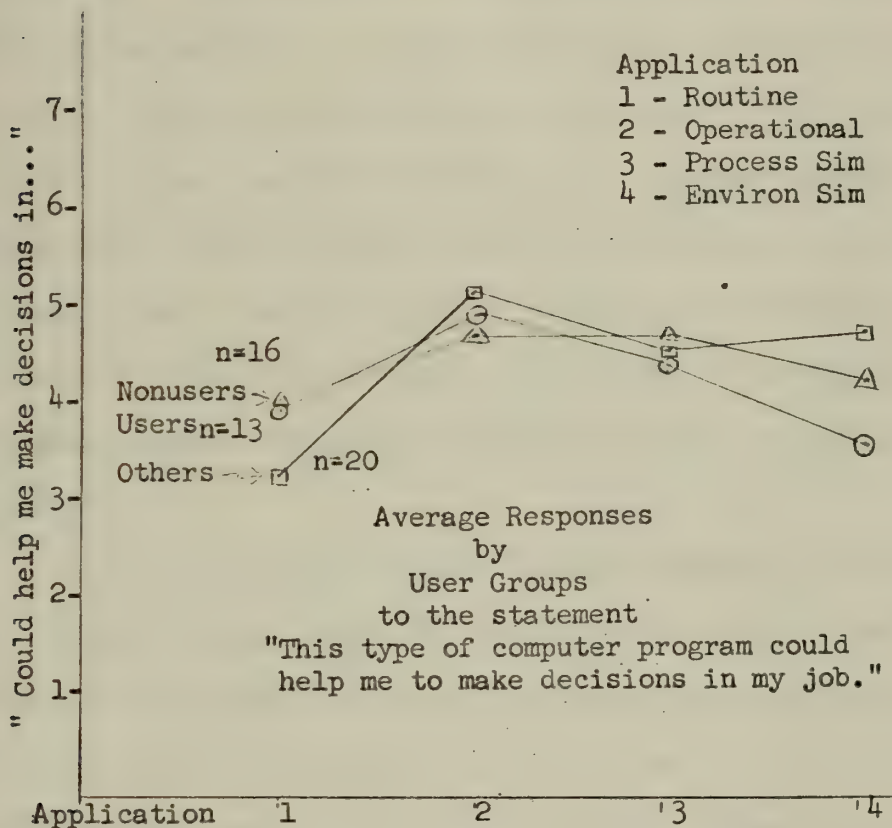
Figure 5-6



On average, extensive current users of computers do not believe any of the computer applications are as useful for helping them in their jobs as nonusers think those applications could be. Figure 5-7 depicts a graphic representation of average scores of user, nonuser and "other" department individuals in response to the question, "This type of computer program could help me make decisions in my job." It is interesting to note that while officers in nonuser and "other" departments share quite similar, consistently

high opinions concerning the helpfulness of each application, user department officers' evaluations of application helpfulness decrease continuously as the complexity of the application increases.

Figure 5-7



Note that opinions concerning the helpfulness of computer applications for decision-making expressed by officers of user departments become less favorable as their familiarity with an application decreases (excluding routine applications). Such is not the case with opinions expressed by officers in nonuser and "other" departments. These latter officers hold a relatively high opinion

of the helpfulness of applications in spite of a much greater diminution in familiarity with more complex applications. To a model builder this is at least a small signal that those groups holding the more favorable opinion for his model base that opinion in much less knowledge. This difference in patterns of opinion could be explained in several ways. Current user groups could be those for which routine computer applications are most suited. Individuals in these groups have correctly perceived the relative uselessness of advanced computer applications to their tasks. On the other hand, current user groups could be satisfied and supported by routine applications and could claim lack of helpfulness of new applications because these applications are perceived as threats to current user group status.

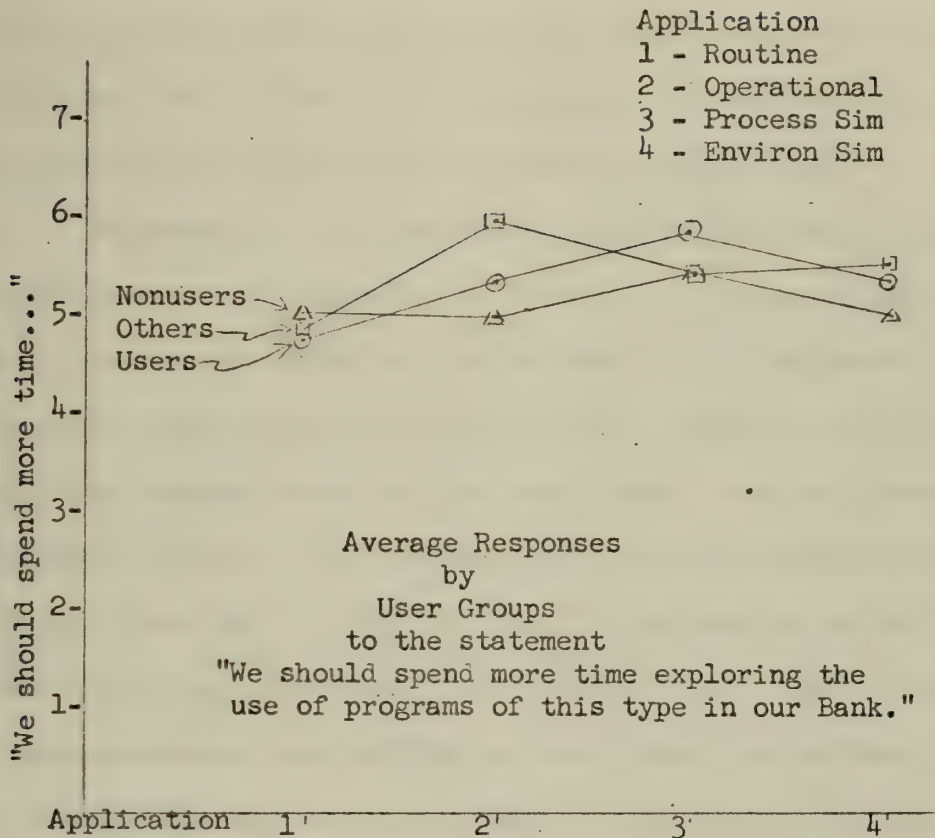
Considering nonuser groups, similar arguments could be stated. Nonuser groups may correctly recognize current computer applications to be helpful for making decisions in their jobs. They may not think these applications are helpful now. In spite of lack of familiarity with more advanced applications, nonuser groups assess that those applications may be equally as helpful. An alternative explanation may be that current nonusing departments feel they need computers but that the only way to get them is through new applications, because current users have monopolized computer use or, even more likely, current users share a different philosophy of banking than do nonusers. (Nonusers, Trust and Lending, have been identified as predominantly traditional in thought and opinion.)

The opinions of the "other" departments parallel those of nonusers. Arguments for their behavior would be the same as those given for nonusers. An important difference, however, is that "other" departments, Marketing and Branches, have been previously identified as holding opinions favoring innovation and change rather than the more traditional opinions of the current nonusers.

To summarize, a variety of motivations and beliefs may underlie the difference in patterns of response to statements of familiarity and helpfulness of computer applications. These may include accurate estimates of computer application potentials, desires to keep or change the status of computer-users, and desires to pursue various types of banking activity each type of which may favor different categories of computer application.

In addition to an investigation of officers' familiarity with and perception of helpfulness of computer applications, an analysis of their opinions concerning the Bank's and their personal exploration of various applications was made. Responses to the statements, "Which applications should the Bank explore further?" and "On which applications am I willing to spend my own extra time?" were divided by the three user categories. Figure 5-8 graphically presents the average scores of the three user categories for the statement, "We should spend more time exploring the use of programs of this type in our Bank." Note that the overall levels are high (4.75-6.0 on a scale of 1 to 7). There is no clear difference in the overall score patterns, but each user group has at least one

Figure 5-8



application on which it scores highest. This is in contrast to a single group scoring highest on all applications. Those applications upon which each user group wants the Bank to spend more time exploring are:

Users - Process Simulation

Nonusers - Routine

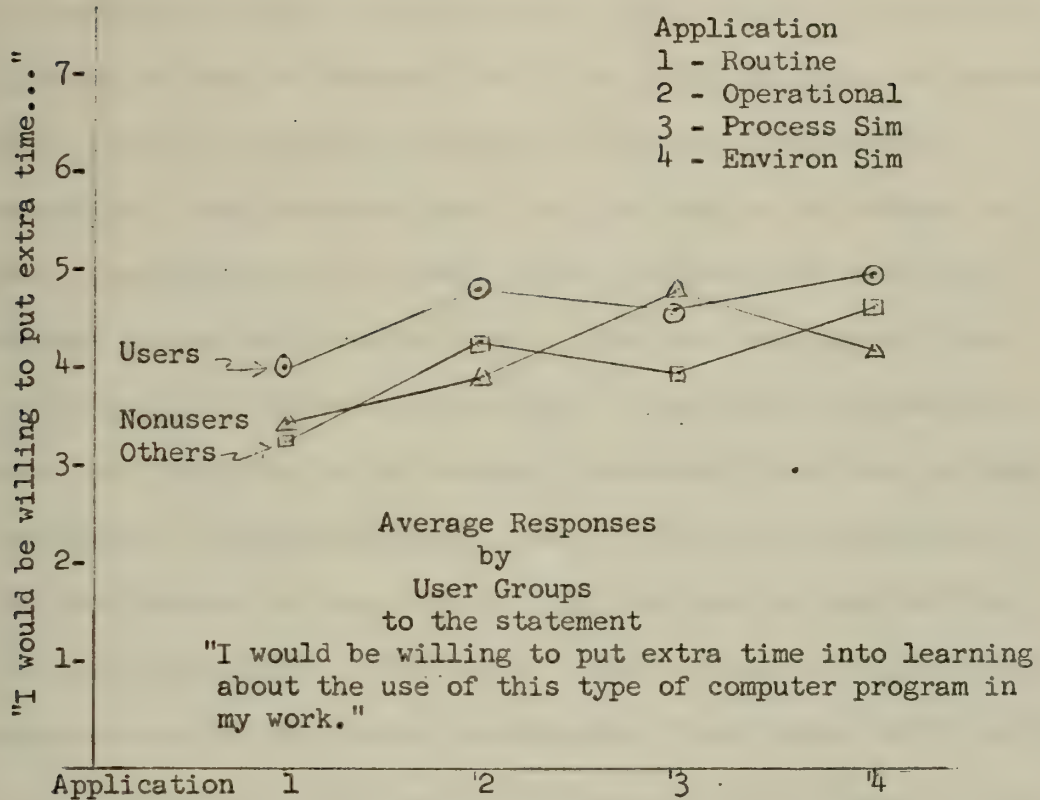
Other - Operational, Environmental Simulation

This finding would seem to suggest that different departments would be more likely to support different types of applications. The differences in opinion were by no means striking, however, and it must be concluded that officers in all departments would like to see the Bank explore both process and environmental simulations.

Responses to the question, "I would be willing to put extra time into learning about the use of this type of computer program in my work," were quite different from answers to the statement of the Bank putting extra time into an application. Figure 5-9 graphically presents the average scores of the user groups. Levels of response are somewhat lower for this statement as opposed to the previous one (3.4-5.1). There is a clear difference in the scoring pattern of the user department as opposed to the nonuser and "other" departments. User departments are more willing to spend extra time on every application except Process Simulation, and on this application they score only slightly lower than nonusers. Users seem more interested in spending extra time on non-routine applications, a natural interest considering their already high familiarity with the Routine category.

Since current users do not perceive environmental simulations as helpful in on-the-job decision-making, this relatively high level of interest expressed in spending extra time to become familiar with them may be considered professional curiosity, especially for Operations officers. Of course, one cannot discard the notion that increasing current user's knowledge of environmental simulations may

Figure 5-9



change their opinions toward the usefulness of those simulations. Knowledge of the Bank and of the very traditional nature of the Operations department intuitively reduces the likelihood of this latter notion.

The responses of the nonuser and "other" groups to the question of spending extra time show a roughly equal level of willingness on their parts to spend extra time on Routine and Operational categories but different opinions for the two simulation applications.

Specifically, the nonusers are more interested in spending extra time on Process simulations while the "others" are more interested in spending that time on Environmental simulations. A possible explanation of this difference lies in the tasks of these two departmental groups. Nonusers, the Trust and Lending departments, historically have customers come into the Bank to do business with them. The complexities of their tasks, as they view them, are internal process complexities, e.g., portfolio management, loan credit, and loan portfolio balancing. Simulations of these processes have appeared in the banking literature¹ from time to time. Individuals in these areas would then be naturally interested in this application for their own use, as they are not now familiar with such applications. The "other" group is made up of the Branch Administration and Marketing departments. Their tasks are relatively new to banking and, more importantly, are strongly related to going out to the customers and developing business. A model which could assist them in better understanding the business environment would seem to have a natural appeal to these groups.

Briefly summarized, the analysis of responses to statements concerning applications in which the Bank and individual officers should spend their time did not yield any strong findings. In a general sense, officers in user and "other" departments responded

¹See, for example, Gaylord Freeman, Jr., "What a Bank Information System Means to Me," Banking Magazine, April 1971, or the National Conferences on Automation held annually by the American Bankers Association.

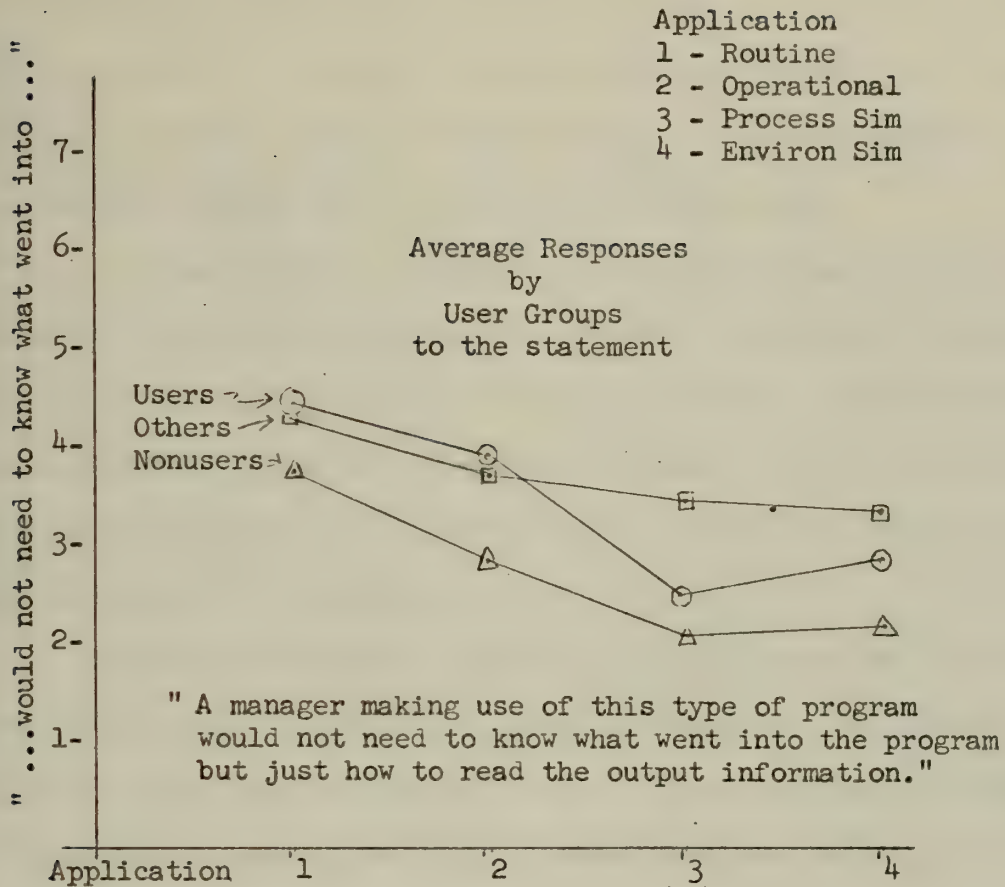
stronger to the Bank's spending more time exploring process and environmental simulations than did officers in nonuser departments.

Nonusers favored more time spent on operational programs. Overall, however, the level of response was such that it must be assumed that all officers hold favorable opinions toward the Bank's spending more time on both types of simulation.

Current users respond with more willingness to spend extra time to learn about all computer applications than the remaining groups. Officers in "other" departments are more willing than nonusers to spend time on environmental simulations but not as much as current users. Overall, however, scores are not remarkably different for environmental simulations, and it must be assumed that willingness to spend extra time is not a particularly good variable for a model builder to incorporate in any choice of group through which an environmental simulation is to be used.

One final set of responses proved interesting, especially in opposition to the opinion patterns expressed in response to question 3, " . . . could help me make decisions in my job." That is, the set of responses to question 6, "A manager making use of this type of program would not need to know what went into the program but just how to read the output information." Figure 5-10 presents this set of responses graphically. Note that the averages show a considerable difference in level (2.125-4.55) both among applications and groups.

Figure 5-10



Relative to other officers, users agree that one need not know what goes into a Routine or Operational program, but they express much more disagreement on the issue for both simulation applications. (The difference in average scores is 1.5.) They seem to want to know more about Process simulations than about Environmental ones. Nonusers consistently believe more strongly than the remainder of the sample that an individual needs to know what goes into a program, if output is to be useful. This feeling is strongly expressed for both simulation categories. Especially interesting is

the set of responses by the "other" group. Almost uniformly, relative to the remainder of the sample, they agree that one need not know what goes into a program if he can read its output. This group appears on average to be relatively willing to use complex simulations without knowing much of what goes on inside them.

In comparison to question 3, nonusers express a pattern of opinions of the amount of knowledge necessary to make use of program output roughly parallel to their opinions concerning the helpfulness of applications for on-the-job decision-making. That is nonusers think that more knowledge is needed about programs they believe to be more helpful for decision-making.

There is no similar parallel for either users or "others." Users believe relatively more knowledge is necessary for complex applications but show decreasing scores on the helpfulness of those applications for decision-making. "Others" believe knowledge is more necessary as application complexity increases but feel Operational applications and environmental simulations are about equally helpful. "Others" have a relatively high opinion of the usefulness of all applications beyond Routine.

The implication of this finding is not crystal clear. A match of opinions strongly supporting the helpfulness of simulation applications and the need to know what goes on inside a model was hoped for. A match of this type would have fit with Marketers' strong feeling that users must know what goes on inside a model and would further support an implementation program including sufficient

education for users to be knowledgeable about model workings.

Unfortunately, there was no clear match. Officers responding that simulations were helpful believed less knowledge was necessary than officers who thought simulations were not very helpful at all.

Nevertheless, none of the responses tended very strongly toward believing information about what goes on inside was not helpful. Even "others," the group most in agreement with the statement, scored only 3.4 on a scale of 1 to 7. While there was no clear match, the group most supportive of environmental simulations in decision-making moderately favors some knowledge of what goes on inside a model. User groups who do not support the helpfulness of environmental simulations believe even more strongly that knowledge is necessary, but it is not clear whether this is due to professional curiosity or a desire to learn. In any event, the relevance to this research is whatever information may aid in a successful implementation of an environmental simulation. Since the Model is to be used initially in processes concerning both branches and marketing, the "other" departments, it is worth knowing their opinions, individually and relative to other departments which may affect branch or marketing use.

Summary of All Computer Application Statements
Compared to Departments

With these five sets of relatively detailed results in hand, some attempt must be made to generalize some characterization of the various user groups in terms of these specific findings and also some implications of these characterizations for a model implementation strategy.

In a most general sense, the dimension of current department does not seem to differentiate a complete set of favorable or unfavorable opinions about an application(s).

It can be generally stated that members of current user departments are more familiar with all four application types than are other officers. It can also be generally stated that at least one group in the user spectrum besides the user group will think each computer application type is more useful for on-the-job decision-making than does the user group. This is a very important finding. It implies that current users of computers in the Bank do not perceive them as being as helpful for making decisions as non-users do. Figure 5-6 also shows that as the application goes from Operational to Environmental Simulation, the strength of the user group opinion that the application may be helpful for on-the-job decision-making falls. For an implementation strategy for decision-assisting models this is critical. Those people currently using computers will not think decision-making models will help them as

much as other officers may think so. Therefore, for implementation of a complex simulation, one would not look to Operations or Headquarters for support.

To summarize, the expectations expressed prior to this investigation of the relationship of functional department to opinions concerning computer-related statements were not correct. While individuals in user departments are on average more familiar with all four applications and are willing to spend more extra time learning about most applications than are the individuals in remaining departments, they consistently express a lower opinion of the helpfulness of all applications in making on-the-job decisions. Users most want the Bank to spend more time exploring Process simulations. Finally, for simulation applications, users hold opinions intermediate to nonusers and "others" concerning the amount of knowledge a user must have of the insides of a program in order to use its output, i.e., nonusers believe more knowledge is needed than do users, while "others" believe less is needed.

Expectations for nonusers were likewise incorrect. While they were less familiar with all applications, they generally believed them to be more useful for on-the-job decision-making and strongly believed that knowledge of the program was necessary if its output were to be useful. While generally less willing to spend extra time on any application, they were more willing to do so on Process simulation than users were. They consistently want the Bank

to spend less time on all applications than do users but like users they are most interested in the Bank's exploring Process simulation.

The "other" group, for which no prior expectation existed, is generally less familiar with simulations than nonusers. For applications beyond Routine, the "others" were relatively high in their opinion of helpfulness in on-the-job decision-making, scoring highest on Operational and Environmental simulation applications. They did not generally believe that knowledge of a program was necessary for efficient use of output and scored considerably higher along that dimension than the remaining groups on both simulation applications. "Others" were generally not willing to spend as much time on any application as users but were willing to spend more time than nonusers on Operational and Environmental simulation applications. In a similar way, "others" wanted the Bank to spend more time on Operational and Environmental applications than did either of the remaining groups, and they scored in a manner similar to nonusers for Routine and Process simulation applications.

From these group characterizations, different strategies for implementation seem to be appropriate, depending upon the type of computer application to be implemented. Routine programs would be best accepted by current user groups. While user groups are personally interested in more advanced applications, they hold relatively favorable opinions on the helpfulness only of Routine applications. Operational programs appear to be widely perceived as helpful. They would probably be accepted by any group, holding all

other identifying variables constant. The nonuser group, however, would want to know more about them than the remaining two groups. Process simulation would likewise be acceptable to all three groups but most acceptable to the nonuser group. This group is currently the least familiar with process simulation and expresses a strong opinion that it would be necessary to know what went into the program. Environmental simulations would probably be best accepted by the "other" group. It is true that current users seem to be most willing to spend extra time learning about Environmental simulations, but they hold the lowest opinion of their possible helpfulness to on-the-job decision-making. Relative to users and nonusers, the "other" group consistently expresses opinions favorable to Environmental simulation. In addition, relative to users and nonusers, the "others" believe more strongly that output from Environmental simulations may be useful without knowing much about the internal program workings of the simulation relative to other groups. This last characteristic could be very important to an implementation strategy because it would allow the builder of a very complex model to introduce that model with an expectation of some acceptance without having to teach the prospective user group as much about the model as would be necessary if that prospective group was composed of individuals from departments currently identifiable as users or nonusers of computer applications in the Bank.

Summary of Analysis of the Computer-Related Variables

Three independent identifiers have been analyzed for some expected relationships between them and responses to seven statements expressing knowledge, opinions and beliefs about four different computer applications. The results of the analysis reveal some clear, if not simple, differences among various groups distinguished by some measure of the identifiers, political groups, familiarity and user departments. Their differences have some implications for a strategy of computer-based model introduction and implementation.

Two general criteria should guide any strategy in this Bank. First, the model must be introduced through one or another subgroup within the Bank rather than a broad spectrum of officers. This subgroup will vary with the type of computer application to be introduced. Second, it must be accepted that there is no simple categorization of individuals identified through this analysis (and it is believed that this would be the case for any analysis) which would precisely define a group as being receptive to a model.

The subgroups identified in this analysis are Bankers, Marketers, individuals highly familiar or not so familiar with an application type, and individuals in user, nonuser and "other" departments.

Figure 5-11 presents a list of groups identified in this analysis who generally hold opinions and beliefs favorable for the implementation of a given type of computer application.

Figure 5-11

<u>Application</u>	<u>Groups</u>	<u>Size</u>
Routine	Bankers	10
	current Users	13
	those highly familiar with	
	Routine programs	38
Operational	Bankers (but less than Routine)	10
	all user categories	52
	those highly familiar with oper-	
	ational programs	23
Process Simulation	Marketers	11
	nonusers	16
	those familiar with Process	
	Simulation	9
Environmental Simulation	Marketers	11
	"other" user groups	20
	those familiar with Environ-	
	mental simulation	5

Note that for Routine and Operational applications the size of the supporting groups is large. If each grouping is equally important with respect to its influence upon an individual, a model builder could expect acceptance to be relatively easy (assuming a useful model throughout). For simulations, however, the group sizes drop, and only specific groups hold common, favorable opinions. This would indicate that an implementor would be well advised to spend some time identifying members of these groups.

Note also that the groups are neither mutually exclusive nor inclusive. As stated earlier, there is no simple way to classify an individual into all favorable or unfavorable groups with respect to a computer application. An enumeration of group memberships

reveals that for Process simulation no individuals share membership in the Marketer, nonuser and familiar groups. For Environmental simulation, only two individuals (ID 18 and 48) share membership in the Marketer, "other" and familiar groups. At best, a builder must implement through a group that holds some opinions favorable to his type of application, en environmental simulation in this case.

The opinions most relevant to Model implementation are those concerning the application of environmental simulations. Within this set of opinions, expressions of perceived helpfulness of environmental simulations and of the need to know what goes on inside a program may be very important in the early stages of Model introduction. Individuals expressing relatively favorable opinions about the helpfulness of environmental simulations may initially be more predisposed to aiding their introduction. The group with the most favorable opinion on this issue is Marketers. Officers in the "other" departments, branches and marketing, also held more favorable opinions on this issue than did the remainder of the sample. Note that officers in departments currently using computers believe less in their helpfulness than officers in any other department. Officers in these two groups holding favorable opinions for the Model's helpfulness in decision-making all want to know something about what goes on inside a model. Marketers as a group are strongly desirous of such knowledge. Branch and marketing officers

as a group are relatively less interested in this knowledge than other groups. It would seem, however, that the builder will have to provide some education about Model workings.

Finally, the builder must be aware of the high expectations for environmental simulations already held by five officers who express themselves as being familiar with those simulations. While few in number, these five officers may be the Model's strongest supporters. Some initial care should be taken to ensure their continued support (they represent four departments, branches, headquarters, operations and trusts) without creating aspirations which cannot be fulfilled.

If he has some choice, then, it is recommended that the builder work with officers from groups or departments holding more favorable opinions toward complex computer applications in general and environmental simulations in specific. Since both the branch site selection and performance appraisal processes affect branch officers, it is likely that the builder will be able to work with officers generally favoring Model use.

CHAPTER VI

Analysis of Perceptions of the City and Region of North Harbor

The over-all objective of this research is the examination of decision processes and their potential alteration by the introduction of a high-variety, formal model of the local business environment. To accomplish this objective, a conceptual framework of an organizational system interacting with a segmented decision process has been developed. A key element of the organizational system is its Environment, previously defined as the "systems and phenomena" external to the Bank and encompassed in the City and Region of North Harbor.

The formal Model to be implemented is a regional simulation of the North Harbor area. It is designed to provide a much richer field of demographic and economic data than is currently available. The specific decisions for which the Bank has already indicated interest in using such a model e.g., branch site selection, require some type of environmental data. An understanding of perceptions and attitudes held by the Bank's officers is, therefore, very important both for a description of the current state of the organizational system's view of its Environment, for some understanding of how these views may affect decision processes requiring environmental knowledge, and, ultimately, how the views come to be modified by use of the Model.

This chapter will describe an aspect of how Bank officers view the City and Region of North Harbor. It will investigate similarities and differences in individual descriptions of the City and Region. It will discuss how some environment-related identifying variables, e.g., age and birthplace, associate with some characteristic clusterings of groups along various structural dimensions. Finally, and most important, this chapter will discuss some implications of an individual's pattern of scoring for a strategy of implementation of an environmental simulation.

The instrument chosen to illuminate some underlying structure in an individual's perception of the City and Region of North Harbor was a modified adjective Q-sort. It consisted of two decks of fifty cards, each card containing one adjective. The City and Region decks contained identical adjectives, chosen for their ability to describe a city or geographical area, and were color coded to prevent any confusion. The two decks of cards were given along with the questionnaire to each officer in the sample. The officers were asked to sort the adjectives in each deck into five categories ranging from "most descriptive" to "most undescriptive." The instructions are included as page 11 of Appendix B. The adjectives chosen for sorting are listed in Figure 6-1.

Figure 6-1

List of Adjectives to be Sorted

academic	liberal
antiquated	memorable
bland	middle class
changing	monotonous
charming	neighborly
clean	old
commercial	open
conservative	peaceful
constraining	polluted
cosmopolitan	picturesque
cultural	poor
declining	progressive
dignified	provincial
dirty	redeveloped
ethnically diversified	residential
explosive	run-down
fluid	seething
fresh	sophisticated
growing	sprawling
historic	stagnant
improving	teeming
industrial	thriving
intimate	ugly
kaleidoscopic	vibrant
lazy	young

These adjectives were selected after sample lists were tried with individuals either associated with the research or with fields of study in which descriptions, especially descriptions of urban regions, are important. Several broad concepts such as growth potential, physical quality, concern for personal security, and pride were used as criteria for inclusion of an adjective in the list. The final list was checked with the environmental simulation Model-builder and a practicing regional planner for its capacity to describe a city or region in general and North Harbor in particular. Some underlying factors, e.g., growth and optimism, were thought to

be embodied in this list of words. Because of the exploratory nature of the test, however, there was no prior expectation that these factors would conform exactly to the broad concepts used as guides for inclusion of adjectives in the list.

The applicability of various psychological instruments to the study of individuals' attitudes and perceptions of his environment was discussed by Craik in 1968.¹ Among the instruments he recommended were adjective checklists (ACL's) and Q-sort descriptions. A pure adjective checklist uses several hundred words and allows the respondent complete freedom in choosing those adjectives he feels are descriptive or un-descriptive of a particular item or environment. While this instrument minimizes bias due to forced selection of words, it maximizes scoring difficulties and makes comparisons between individuals or groups difficult. Comparisons must be made on the basis of number of adjectives checked versus the scores on any set of adjectives unless all or most respondents check the same words. The Q-sort is equally simple to administer and provides a firm basis for comparisons between individuals or groups since all adjectives used in the deck must be sorted into one of the applicable categories.² For this research the consistency obtained and the

¹Kenneth H. Craik, "The Comprehension of the Everyday Physical Environment," Journal of the American Institute of Planners, January 1968, pp. 32-35.

²J. Block, The Q-Sort Method in Personality Assessment and Psychiatric Research, Consulting Psychologists Press, Palo Alto, Calif., 1965. (Especially self-administered Q-Sorts.)

closure the forced choice offered were thought to outweigh the possibility that individuals did not associate any, or at least many, of the adjectives presented with relevant parts of the environment thus placing them into categories only because they were forced to do so. One modification was made, however. While a traditional Q-sort requires equal numbers of responses in each category, this sort allowed any number of responses to be placed in each category but required that every adjective be placed in some category.

Every officer in the sample responded to the Adjective Q-sort for both City and Region. These responses were factor analyzed using the AQD program FACTOR¹ in an effort to find a small set (no more than five) of underlying common factors explained by the sets of adjectives in the test. No attempt was made to develop a total set of environmental factors or to plumb the extent of perceived environmental complexity.² Rather several major environmental factors were sought upon which respondents might focus a description.

A set of five uncorrelated factors was estimated for both City and Region. These factors were orthogonally rotated to maximize the explanation of the factors in terms of the adjectives; 56.7% of the variance in response was explained by the rotated factors. The

¹R.O. Schlaifer, User's Guide to the AOD Collection, 2nd ed., President and Fellows of Harvard College, Cambridge, Mass., 1972, Chapter 9.

²H.M. Schroder, M.J. Driver and S. Streufert, Human Information Processing, Holt, Rinehart & Winston, New York, 1967, Chapter 3. (This volume presents a different analysis of cognitive structure independent of information content.)

resulting rotated factors were then interpreted as five dimensions of structure underlying the Bank officers' perceptions of the City and Region of North Harbor. A detailed account of the procedures undertaken during the factor analysis is contained in Appendix F.

City Factor Interpretation

The rotated factors required interpretation for them to be meaningful. Each factor was analyzed in terms of two sets of variables, those that loaded strongly with the factor and those that loaded very weakly - in other words, those that described what the factor was and those that described what it wasn't.¹ A complete factor loading table for the five rotated City Factors is contained in Appendix F.

From the factor loading table those variables (adjectives) with a relatively high or relatively low level of association with a factor were chosen and grouped as depicted in Figure 6-2. Association was measured by the strength of an adjective's "loading" upon a particular factor, as found in the factor loading table of Appendix F. "Heavy Loading" was defined as equal to or greater than $\pm .5$ or equal to or greater than $\pm .25$ if the adjective loaded equal to or greater than $\pm .50$ on another factor. "Weak Loading" was defined as less than $\pm .1$. Factor names were derived from each list of adjectives highly associated with a factor. The names were then checked

¹R.J. Rummel, Applied Factor Analysis, Northwestern University, Evanston, Illinois, 1970, p. 419.

Figure 6-2

City Factor Names and Components

Factor 1 - Dynamism		
High	Loading	Weak
improving	.70	academic
vibrant	.69	bland
growing	.65	constraining
open	.65	cultural
progressive	.64	middle class
fresh	.63	monotonous
dignified	.60	old
thriving	.58	polluted
stagnant	-.56	seething
declining	-.55	ugly
kaleidoscopic	.53	

Factor 2 - Static Physical Impression		
High	Loading	Weak
ugly	.65	academic
lazy	.59	conservative
clean	-.56	cosmopolitan
monotonous	.56	cultural
seething	.56	ethnically diversified
dirty	.51	fresh
teeming	.50	historic
declining*	.31	improving
neighborly*	-.29	intimate
		middle class
		progressive
		sophisticated
		sprawling
		young

*Meets criterion of opposite sign.

Figure 6-2 (continued)

Factor 3 - Academic and Cultural Presence

High	Loading	Weak
academic	.64	antiquated
young	.59	bland
cultural	.54	conservative
fluid	.50	cosmopolitan
charming*	.47	dignified
monotonous*	-.47	explosive
commercial*	-.29	growing
		improving
		polluted
		poor
		provincial
		redeveloped
		seething
		teeming
		ugly

Factor 4 - Socioeconomic Impression

High	Loading	Weak
middle class	.58	bland
industrial	.56	dirty
neighborly	.55	growing
commercial	.52	old
ethnically diversified	.51	open
cosmopolitan*	.33	picturesque
improving*	-.25	poor
		progressive
		redeveloped
		seething
		sophisticated
		young

* Meets criterion of opposite sign.

Figure 6-2 (continued)

Factor 5 - Blandness		
High	Loading	Weak
bland	.67	academic
conservative	.54	clean
peaceful	.54	declining
explosive	-.52	dignified
cosmopolitan	-.51	dirty
progressive*	-.31	fresh
vibrant*	-.26	growing
		historic
		kaleidoscopic
		memorable
		polluted
		picturesque
		poor
		provincial
		redeveloped
		run-down
		sophisticated
		sprawling
		stagnant
		teeming
		young

*Meets criterion of opposite sign.

to ensure that they did not represent any of the weakly associated adjectives.

For example, "improving," "vibrant," "growing," "open," and "progressive" all connote positive action and powerful forces while "declining" and "stagnant" connote deterioration and absence of any movement. Along a continuum these adjectives seem to describe the presence or absence of some dynamic aspects of the City, hence, the designation dynamism. This dynamic aspect of the City is not conveyed by any of the weakly loading adjectives. "Monotonous" for example connotes a tiresome scene but does not describe presence or absence of action or power. A high score on this factor will indicate that one perceives the City as changing for the better or in some positive manner.

In Factor 2 the words loading heavily convey a snapshot description of the City. Words like "ugly" and "dirty" fit common stereotypical descriptions such as, "It certainly is a dirty city." All of the positively weighted words connote unpleasantness. One can visualize "teeming masses" or "monotonous" facades. Clean shows up more heavily weighted than dirty but negatively against the direction of the image most heavily weighted words impart. A high score on this factor will suggest an individual impression of unpleasant physical surroundings in North Harbor.

Words such as "academic," "cultural," and "charming" led to the designation of Factor 3 as Academic and Cultural Presence. "Young" fits because much of academia or of today's culture is

associated with youth. Only "fluid" is difficult to explain in this context but it connotes a flexible quality often associated with "academic." Unlike Factors 1 and 2, this factor reflects a more abstract dimension of the City. It is more difficult to get a group of people to agree to a measure of culture, charm or youth. In North Harbor, however, a measure for the term academic is probably widely agreed upon because of the number and quality of institutions of learning in the City. Over-all, while individuals may score differently on their perception of academic as descriptive of North Harbor, they will, as a group, recognize some cultural dimension to the City.

Factor 4 clearly connotes some impression of a socioeconomic aspect in an individual's description of the City. "Middle class," "neighborly," and "ethnically diversified" convey an image of neighborhood and a perception of people as part of any description. Industrial and commercial convey the recognition of the working activities occupying many of the people. While these words may vary in definition from individual to individual, they generally convey a clear and concrete image or impression to an observer.

Factor 5 is the hardest to interpret. The adjectives most heavily associated with it, "blandness," "conservative," "peaceful," "explosive" and "cosmopolitan," may be broadly categorized as abstract descriptions of some physical impression, just as the adjectives associated with Factor 2 may be broadly categorized as more concrete descriptions of the same impression. Factor 5 then seems to convey

some over-all image of the City, a more conceptual image. It has been named "Blandness" because "bland," an adjective loading heavily on the factor, seems to be at one end of a continuum of abstract description whose other end is represented by "explosive," another adjective with a heavy, but negative loading.

In summary, the five City Factors all proved to be interpretable. They provide several dimensions of potential usefulness for investigating various individual, group, and potential group perceptions of the City. These dimensions include the dynamic, change-related aspects of the City, its concrete physical impression and, to a lesser extent, some abstract physical impression, an academic and cultural presence, and a socioeconomic impression.

Region Factor Interpretation

The five Region Factors were more difficult to interpret. As a group they were different from the City Factors. A loading table for the Region Factors is contained in Appendix F. Figure 6-3 contains the names of the five factors and the adjectives having relatively high and low associations with each factor. The criteria for Heavy and Weak loading are the same as those used for City Factors.

Figure 6-3

Region Factor Names and Components

Region Factor 1 - Static Physical Impression		
High	Loading	Weak
dirty	.74	academic
ugly	.73	cosmopolitan
declining	.67	cultural
run-down	.67	ethnically diversified
polluted	.64	explosive
poor	.60	growing
clean	-.57	industrial
peaceful	-.51	kaleidoscopic
monotonous*	.49	liberal
picturesque*	-.41	middle class
neighborly*	-.30	open
		provincial
		sophisticated
		thriving

Region Factor 2 - Personalized Dynamism		
High	Loading	Weak
intimate	.72	academic
kaleidoscopic	.69	bland
vibrant	.61	charming
redeveloped	.51	commercial
growing	.46	conservative
clean*	.27	declining
stagnant*	-.24	ethnically diversified
		industrial
		monotonous
		polluted
		picturesque

*Meets criterion of opposite sign.

Figure 6-3 (continued)

Region Factor 3 - Stagnation

High	Loading	Weak
stagnant	.69	academic
changing	-.68	charming
constraining	.68	clean
bland	.60	cosmopolitan
monotonous	.52	cultural
		ethnically diversified
		explosive
		fresh
		industrial
		intimate
		peaceful
		picturesque
		residential
		sophisticated
		sprawling
		teeming
		young

Region Factor 4

High	Loading	Weak
explosive	-.65	academic
picturesque	.62	bland
improving	.56	changing
memorable	.53	charming
growing*	.35	clean
		constraining
		declining
		dirty
		lazy
		open
		polluted
		poor
		redeveloped
		residential
		sophisticated
		young

*Meets criterion of opposite sign.

Figure 6-3 (continued)

Region Factor 5 - Cultural Presence		
Weak	Loading	Weak
sophisticated	.60	antiquated
cultural	.58	bland
growing	-.54	changing
historic	.52	clean
		constraining
		declining
		dirty
		explosive
		fluid
		improving
		intimate
		open
		peaceful
		polluted
		poor
		run-down
		sprawling
		teeming
		vibrant

Three of the five Region Factors seem to be associated with the same adjectives as are the City Factors; they are listed in Figure 6-4.

Figure 6-4

City and (Approximately Equivalent) Region Factors

City Factor 1 = Region Factor 2
City Factor 2 = Region Factor 1
City Factor 3 = Region Factor 5

Region Factors 3 and 4, while sharing some supporting adjectives, do not appear to be close enough to City Factors to be equivalent. This difficulty led to a review of all of the Region Factors. With the possible exception of Region Factor 5, all contain more subjective or people-related adjectives than the corresponding City Factors. For example, City Factor 2 contains adjectives describing the physical image of North Harbor in relatively concrete terms. Region Factor 1 uses essentially the same adjectives but in addition contains words such as "poor" and "peaceful" both suggesting some human quality. Even more subjective and personal is the heavy loading of "intimate" in Region Factor 2.

Region Factors 3 and 4 both generally denote some type of abstract image but do not exclusively contain subjective "human" adjectives. Another characteristic of these factors is that the images they convey are both mixed and overlapped with Region Factors 1 and 2, a characteristic that makes them less clear than City Factors. For example, Region Factor 3 contains "bland," an adjective loading heavily on City Factor 5, but it also contains "stagnant," an

adjective loading weakly on City Factor 5 and heavily on City Factor 1. In general, Region Factor 3 conveys a feeling of unchanging sameness but a sameness of low quality, a description of stagnation.

Region Factor 4 seems to be a variation of Region Factor 3 in that it reflects another abstract image. "Explosive" loads heavily upon it as it does in City Factor 5 but "memorable" and "picturesque" which also load heavily have a weak loading on City Factor 5. "Memorable" and to some extent, "picturesque," are other human-related adjectives loading on a Region Factor. Region Factor 4 generally seems to convey a mixture of the dynamism of City Factor 1 ("improving," "growing") and the abstract physical impression of City Factor 5 ("explosive") plus some human-related content represented by "memorable" and "picturesque."

Comparison of Interpretations of City and Region Factors

At risk of over-psychologizing, the apparent mix in images conveyed and presence of some people-related adjectives in the Region Factors may be explained by some differences in rules an individual uses to integrate his perceptions of City and Region. An individual's "integrating rules" or cognitive rules for combining the various dimensions of the stimuli he observes in a domain (in this case the Region in which he lives and works) could well be more complex for the Region since so many aspects of his life are focused upon that physical region.¹

¹H.M. Schroder, et al., op. cit., pp. 15-16.

All of the respondents share a common perspective from which they view the City. That perspective, or vantage point, is their place of work: the Bank. This is not to say that all respondents view the City the same way but only that they have some common basis from which to view. Because they all know in common what "City of North Harbor" means they are able to describe it more uniformly in terms of a given set of factors. Such is not the case for the North Harbor Region. Even though the instructions included some geographical limits (see Appendix B), the respondents had very little common vantage point from which to describe the Region. Region includes home, family, and all non-Bank activity. It immediately acquires a more personalized touch. The vantage point includes one's own suburb or section of City. One's feeling of that suburb undoubtedly colors the description of the remainder of the Region. In addition, a single respondent is unlikely to know much about the whole region and probably substitutes a description of his own suburb for a description of the whole. All these are reasons why as clear a set of underlying factors does not emerge for the Region as for the City.

Another explanation for the failure to get the same five clear factors for both City and Region is that individuals have different dimensions of cognitive structure rather than different integrating rules for both City and Region. That is, a person may

perceive the North Harbor Region through a completely different set of dimensions - in this case factors - from that set with which he views the City of North Harbor.

A third alternative is that both the integrating rules derived from vantage point and background differ and the actual concepts or dimensions of organization in an individual's mind are different for City and Region.

Fortunately, at least three dimensions remain at least relatively stable for both City and Region. (See Figure 6-4.)

This apparent consistency of even three factors has led to an explanation of the differences of the remaining three factors, not in terms of different cognitive dimensions for a region as opposed to a city, but rather in terms of different integrating rules derived from background, vantage point, and work experience. The lack of a common vantage point and the intrusion of personal, non job-oriented concepts into an individual's image of the North Harbor region is similar to unwanted noise in a radio signal. They cause distortion and garble. Thus only the strongest images remain clear - the dynamic and static aspects of the physical environment. That is not to say that the remaining three City Factors are not present in the image of the Region (see Figures 6-4 and 6-6) but only that they are garbled with the noise of individualism and differing vantage points. Within the context of this study, this noise is unavoidable. For future studies, however, some filters may be devised which may minimize noise. Included could be samples in which respondents were

limited to two or three easily recognizable suburbs or city areas, more detailed instructions for defining a region, or choice of a sample for whom the region is a place of work rather than a home.

In summary, the adjective deck responses were factor analyzed using the principal factor method for common factor analysis. Five resultant factors, explaining 56.7% of the total variance, were rotated using an orthogonal Varimax rotation designed to maximize the explanation of factors in terms of variables. These factors were clearly interpretable (see Figure 6-2) for the City responses, but only three were interpretable (see Figure 6-3) in an equivalent manner for the Region responses. The lack of comparability was explained by different cognitive integrating rules for the Region rather than by completely different structural dimensions of individual thought.

Factor Scoring

Having derived a set of five independent factors for the City, three of which are also found in the Region, the question of how to use them arises. The general objective of this test was to determine how individuals and groups of individuals perceive and felt about their environment as derived from their description of the City and Region of North Harbor. It was designed to investigate some affective component of their attitudes toward North Harbor.

In order to investigate an individual's or a group's feeling about an underlying factor, some factor scores are needed. These factor scores are some combination of an adjective's loading

on a factor and an individual's categorization of that adjective as "most descriptive," "slightly descriptive," of the City or Region.¹ In the next section a series of hypotheses concerning these scores is discussed.

Hypotheses Relating Environment Perception and Political Groups

In general, an individual's feelings and perceptions about the City and Region of North Harbor were expected to differ both according to political leaning within the Bank and with variables concerning his background. An individual's age, birthplace, and neighborhood are among these.

Interviews strongly indicated differences in environmental perceptions between the rival groups of Marketers and Bankers. For example, the President, a leading Banker, stated,

I see the Bank . . . as caught between two funnels, under an umbrella of regulation engaged in a keen competition . . .

This perception hints at a constraining, if not hostile business environment, an environment in which one bank wins only at the expense of another, an environment in which the City and Region of North Harbor are dominant elements. Marketers, on the other hand,

¹Both composite and program-derived, standardized factor scores were developed. The results when cross-tabulated with identifying variables later in the analysis were comparable. Composite scores were developed following Rummel's suggested plan. (See R.J. Rummel, op. cit., pp. 441-442.) Cutoffs for adjectives included were the same as those used in naming the factors. Program-derived factors were obtained from AQD package program FACTOR directly using regression estimates.

tend to see the business environment as a challenge and an opportunity. In the words of the Executive Vice President, "When you are fourth, you try harder!"

With some differences in mind, a set of hypotheses relating standardized City Factor scores and political groups was formulated. These hypotheses were tested in the same manner as were the general opinion and performance appraisal variables. The rank order of Index groups was predicted for each standardized factor score. Figure 6-5 presents a table of City Factors, the prior hypotheses formulated, the results, and listing of the mean scores for each of the three Index groups.

Four of the five prior hypotheses related Bank political groups to City Factor scores were confirmed, those for Dynamism, Concrete Physical Impression, Academic and Cultural Presence and Blandness. The hypothesis for Factor 4 (Socioeconomic Impression) was disconfirmed, however, for while Bankers did score predictably higher than Marketers, the Middle group scores much lower than the Marketers. One possible explanation may lie in the previously discussed lack of involvement exhibited by members of the Middle group. Factor 4 definitely embodies a middle class, work-oriented impression of the City. Involvement, in either traditional or innovative banking, may serve to differentiate this social dimension of a description from a more object-focused description of physical and cultural activity. Thus both Bankers and Marketers score higher along this dimension than members of the Middle group.

Figure 6-5

	Factor Scores				
	Dynamism (1)	Physical Impression (2)	Cultural and Academic Presence (3)	Socioeconomic Impression (4)	Blandness (5)
Prior ¹ Hypothesis Direction	M > B	B > M	M > B	B > M	B > M
Actual ² Direction	M > B	B > M	M > B	B > M > Mid.	B > M
Confirmation	confirmed	confirmed	confirmed	disconfirmed	confirmed ⁵
Group Averages ³	.373	-.624 ⁴	.366	-.798 ⁴	.398 .323 -.243
Observations in Group	11	10	11	10	10
					11
					11

¹All hypotheses predicted the Middle (Mid.) group with 31 observations to score between Marketers (M) and Bankers (B).

²If actual matches prior including Middle scoring in middle, hypothesis is confirmed.

³All scores are standardized composite factor scores.

⁴Difference between mean scores of Marketers and Bankers is statistically significant at $\alpha < .05$, using a one-tailed, t-test.

⁵Considering this set of hypotheses as a series of binomial trials in which the probability of success, $p = 1/6$, the probability of observing four confirmations assuming no relationship between political groups and City Factor scores is $< .004$.

The confirmation of the hypothesis about Factor 5 was not very strong but was very interesting. The finding seems to parallel the traditional/innovative aspects of Banker/Marketer thinking. That is, Bankers holding traditional bankers' values may prefer a peaceful and conservative (heavily loaded, positive factor elements) City environment and perceive the City as possessing those qualities. Marketers value innovation and nontraditional growth. They associate an explosive, cosmopolitan (heavily weighted, negative factor elements) City with these values and perceive the City as possessing those qualities but to a lesser degree than Bankers perceive qualities supporting their values.

The differences in factor scores for the Banker and Marketer groups add more support to a description of the Bank's organizational system. While not providing a sufficient basis for any broad inference, they do substantiate the intuitive notion that these two major groups or potential groups of Bank officers share different perceptions of the City in which they do business. The Marketer perceives a dynamically growing environment (Factor 1), possessed with a favorable physical impression (Factor 2), and enjoying some academic and cultural presence (Factor 3). He is not particularly different from a Banker in his view of the socioeconomic dimension of the City (Factor 4). Finally, he perceives an exciting atmosphere in the City (Factor 5), but this image is not as strong or as extreme as a view identified with the word "explosive." The Banker envisions the City as lacking dynamism and rather unpleasant physically. He sees

relatively little cultural and academic presence in North Harbor but views the socioeconomic dimension of the City in much the same way as a Marketer does. Finally, he describes the City as having an atmosphere of quiet and peacefulness, a view entirely in keeping with his traditional philosophy of banking.

These differences in description seem to support the values of traditionalism and innovation. It is likely that these differences would create difficulties in discussions between the two types - Bankers, for example, not understanding how nontraditional policies could be successful in a City described in their (Banker) terms and Marketers not understanding why everyone did not want to take advantage of obvious growth potential. These differences in perception could also affect the interpretation and acceptance of new information concerning the City. For example, a single growth prediction could be seen as very optimistic by some Bankers and somewhat pessimistic by some Marketers. The implications for such differences in Model implementation will be discussed later in this chapter.

No hypotheses were formulated for the Region Factor scores. The confusion of Factors 3 and 4 and the persistence of both subjective meanings and mixed dimension lead to the belief that regional description and the resultant factor scores were not related to internal political camps at the Bank nearly as much as to an officer's home and family. It was also felt that if any group had a work-oriented perception of the Region, even a biased perception, it would be only officers serving in the Branch function.

Hypotheses Related Factor Scores to Some Demographic Variables

While the confirmation of four out of five hypotheses relating City Factor scores to a political Index was considered quite good, the political groups were not thought to be the only variables identifying differences in factor scores. As stated previously, age and birthplace were thought to be equally important, especially for the City Factors.

In general, older respondents (age equal to or greater than 42.5 years) were hypothesized to follow the same factor score pattern as Bankers. Since age is an element of the political Index, there is some overlap here; but since age is only a small part of that Index, the parallels need not be exact a priori. Nevertheless, it is hypothesized that the age split will realise the same results as the Index split.

Birthplace is not included in the Index but is also thought to be an important determinant of how an individual perceives the City. In general, it was hypothesized that factor scores would change in a predictable manner as an individual's birthplace was further from North Harbor. The increments of distance used were 1) North Harbor and its suburbs, 2) Connecticut and the eastern seaboard, and 3) the remainder of the U.S. and foreign. The predicted differences in score were that a North Harbor area native would score higher on Factors 2, 4, and 5 than would a person born beyond the North Harbor area and vice versa for Factors 1 and 3. This set of hypotheses is not supporting the notion that natives particularly

feel well disposed toward North Harbor. In fact, it is felt that many Bank officers who are natives have seen better days in North Harbor or at least perceive some past day as better. The City has not grown much in the last decade¹, especially from a commercial banker's eyes. It is believed that many natives feel stuck with or in North Harbor and view it as a dingy place to work and a rather uninspired place to live. Non-natives, on the other hand, have migrated to North Harbor, some probably for the specific purpose of working in the Bank. It seems more likely that they would consider the City as full of opportunity (They got a good job there, didn't they?) and rather aesthetically appealing, considering the presence of Ivy and the arts which it draws, as well as the historic tradition of the City.

High school was the third identifying variable in a person's background thought to explain differences in factor scoring patterns. It was considered a critical segment of an individual's growing up and was believed to be a key in the community socialization process. The only high school clearly identified by a group of officers in the sample, was Hillhouse High School in North Harbor. Ten of the officers in the sample specifically identified Hillhouse as their high school. While small, this number was thought to be sufficient for the purposes of this analysis. In general the officers attending Hillhouse were thought to best reflect perceptions of

¹For example, while the North Harbor SMSA ranked 79th in population in 1960, it dropped to 83rd in 1970.

individuals who have lived most, if not all, of their lives in North Harbor. They were hypothesized to score high on Factors 2, 4, and 5, in a manner similar to those whose birthplace was North Harbor and for about the same reasons. These hypotheses could fail, however, if the Hillhouse socialization stressed the potential of North Harbor or emphasized the place Hillhouse graduates should play in North Harbor's future.

Figure 6-6, Part A, presents a summary of the tests and results of hypotheses concerning the three background variables discussed above and their relation to City Factor scores.

The tests recorded in Figure 6-6 yielded some interesting results with respect to the individual background variables. First, the general hypothesis that the Old age group would score in the same manner as Bankers and that the Young age group would score in the same manner as Marketers was not fully confirmed. Factor 4, Socioeconomic Impression, and 5, Blandness, appear to be the foci of difference. While it was not possible to confirm the hypothesis that Bankers would score higher than Marketers on Socioeconomic Impression, it was possible to confirm the hypothesis that an Older group would score higher than a Younger group. Looking at this factor alone then leads to the conclusion that age itself is a better determinant of socioeconomic impression than the Index. The opposite result occurred for scores on Factor 5. The Index did differentiate clusters of scores, but age alone did not.

Figure 6-6

	Factor Scores				
	Dynamism (1)	Physical Impression (2)	Cultural and Academic Presence (3)	Socioeconomic Impression (4)	Blandness (5)
Age n = observations Averages	1,2 Young > Old 25 27 .28 -.26*	Old > Young 27 25 .46 -.49*	Young > Old 25 27 .32 -.29*	disconfirmed Old > Young 27 25 .05 -.05	disconfirmed Old > Young 27 25 -.07 .07
	Other > Local 23 29 .42 -.34*	disconfirmed Local > Other 29 23 .01 -.02	Other > Local 23 29 .44 -.35*	Local > Other 29 23 .08 -.11	Local > Other 29 23 .31 -.39*
	Other > HH 41 10 .04 -.34	disconfirmed HH > Other 10 41 -.17 .03	Other > HH 41 10 .09 -.42*	HH > Other 10 41 -.52 -.16*	HH > Other 10 41 .14 .00
Years at Bank n Averages	Few > Many 27 25 .35 -.37*	Many > Few 25 27 .30 -.28*	Few > Many 27 25 .19 -.20	disconfirmed Many > Few 25 27 -.07 .08	Few > Many 27 25 -.03 .03
	Short > Long 26 25 .15 -.22*	Long > Short 25 26 .09 -.1	Short > Long 26 25 .14 -.17	Long > Short 25 26 .12 -.17	Long > Short 25 26 .09 -.03
					small

¹ Unless stated hypothesis stated was confirmed.

² Independent variables were divided at median or at points indicating presence or absence of a quality.

³ * = difference in group means statistically significant at $\alpha < .1$ for a one-tail, t-test.

Second, birthplace alone seems to be capable of predicting four of the five factors identified in the description of the City. Only the scores on Factor 2, Physical Impression, appear to be independent of birthplace as it has been defined above. Of the five factors, Factor 2 is the most external to an individual and is the one most amenable to comparison by another individual. It is a description of the physical impressions of the City as they are observed today. It does not involve any estimates of changing phenomena, culture, socioeconomic levels or degree of blandness. Factor 2 is, therefore, least likely to be affected by any socialization processes involved in growing up in the City. That is to say, no differences are expected in scores on Factor 2 which are attributable to differences in an individual's upbringing. It remains to be seen whether community socialization of the extent believed to be involved in the high school experience will alter this conclusion concerning Factor 2.

The third of the individual results, perceptions by former Hillhouse High students versus other officers, indicate that, unlike birthplace, high school groups do score differently on Factor 2 but not in the direction predicted. On this factor, their perceptions are not reinforced perceptions of City natives or of the Old age group. Instead, Hillhouse graduates perceive the City as somewhat pleasant physically. Generally, however, the high school group factor scores appear to be quite similar to those of the birthplace groups in direction relative to each other.

Two underlying variables appear to be involved in the pattern of confirmation (Part A of Figure 6-6). The first is Time. The second is Community Socialization. While the presence of Community Socialization involves Time in the community, time exposure to the City does not necessarily involve community socialization. The presence of both features in an individual may cause a different set of responses than the presence of one or the other. These underlying variables are not independent. The differences on Factor 2 scores indicate that while exposure time may lower an individual's opinion of the physical quality of the City, some extended period of community socialization may retard that lowering.

To summarize thus far, three background variables were analyzed for some possible relationships to group factor scores in the same manner as the Index was analyzed in relation to factor scores. While the relationships were quite similar for Factors 1 and 3, they were predictable but different for Factors 2, 4, and 5 confirming a prior notion that internal Bank political groups, as identified using the Index, would be neither the sole nor most important variable determining an individual's perception of the City. There is definitely some relationship between each background variable (age, birthplace, and high school) and factor scores. Two underlying variables were believed to be operating through the tested background variables, Time and Community Socialization.

Development of a Composite Variable to Include Time
and Community Socialization

To capture both time and community socialization a new variable seemed to be necessary. This variable should allow for time in the Region as well as community socialization acquired growing up and going to school in the area. Such a variable could be constructed using years as the unit of measure. Some years may be primarily years of socialization, other primarily time in the area, and yet others a mixture of both. The range of the variable, then, would be the number of years an individual had been in the Region. For some this was expected to be a low number - essentially the time at the Bank. For others this number was expected to approximate their age. In general, this variable was expected to be a better predictor of factor scores than any of the non-employment related variables or the employment related Index. To accomplish this task, this new variable would have to successfully predict rank order of scores of groups on all five factors.

Details of the construction of the composite variable are contained in Appendix G.

Five hypotheses were generated for the new variable's relationship to the five factors. Respondents below the median number of years in the Region were hypothesized to score higher than those above the median on Factors 1 and 3. Respondents above the median were hypothesized to score higher on Factors 2, 4, and 5. This is the same pattern of scoring hypothesized for each of the background variables. To be successful, all five of this set of hypotheses had

to be confirmed, the objective of constructing the new variable having been to predict factor scores in terms of both underlying variables - Time and Community Socialization.

The results were as hoped. All five hypotheses were confirmed. Those respondents having fewer years in the Region than the median number did score higher on Factors 1 and 3 while those respondents with more than the median number of years in the Region did score higher on Factors 2, 4 and 5. Specific scores of the two groups for each of the five factors are presented in Figure 6-6, Part B.

In general this finding indicates that individuals having spent a long period of time (as defined above) in the Region describe the City as less dynamic, as physically less pleasant and of less academic and cultural presence than relative "newcomers" do. On the other hand, individuals with a relatively long period of time in the Region describe the City much stronger in terms of socioeconomic impressions and envision it as rather bland, probably reflecting greater familiarity with even small details of the City. From the perspective of an individual who may be a relative newcomer in the Region, the City is more positively dynamic and not physically unpleasant. It has a definite academic and cultural appeal. It is not described nearly as strong in terms of socioeconomic impressions. Neither is it described as being bland.

As was the case with the two political types, individuals with different lengths of time in the Region appear to hold different perceptions of the City. Surprisingly enough, these perceptions are similar for Bankers and those with a relatively long time in the Region and for Marketers and individuals with relatively less time in the Region.

An individual with a relatively short time in the Region may be excited with new prospects, revitalized by continuing professional and economic advancement, or enthusiastic about the plans and effects of a major redevelopment thrust. This excitement or buoyancy may carry over to such an individual's description of the City. It will be necessary for the City to be dynamic, pleasant, academic and cultural to fit his plans for his own future. Information denying the existence of dynamism or pointing up current physical shortcomings could easily create a dissonance to be solved either by aiding in altering the City or by rejecting the Model.

An individual with a relatively long time in the Region will probably not perceive it as dynamic or as physically pleasant but will be more aware of some socioeconomic impressions. Information from a model may at worst reinforce the absence of dynamism or physical pleasantness but if it does so will certainly cause no dissonance. On the other hand a model may indicate the presence of some dynamism not perceived by the "oldtimer." It seems unlikely

that he would reject the model as a means of denying the possibility of improvement, especially if he has some impressions of a peaceful city, perhaps bland, but not bad enough to leave.

Summary

In summary, a set of descriptive factors has been derived from the adjective decks for the City. These factors have been scored with a score on each factor being attributed to each respondent. Patterns of these scores have suggested two underlying variables in an individual's background - Time and Community Socialization - which cause different patterns of description. Patterns are also determined by employment-related variables as contained in a political Index. These basic patterns are the same. That is, the political group labeled Bankers seems to describe the City of North Harbor with much the same pattern of factor scores as a group whose background indicates that they have spent more time in the North Harbor Region than one-half of the respondents. The pattern common to Bankers and long-time inhabitants of the Region is a relatively low score on Factor 1, termed Dynamism, a relatively high score on Factor 2, termed Physical Impression, a relatively low score on Factor 3, termed Academic and Cultural Presence, and relatively high scores on Factors 4 and 5, termed Socioeconomic Impression and Blandness respectively. This pattern indicates that members of the Banker group and the group with a relatively long time in the Region do not describe the City as very dynamic in either a growing, positive sense or a declining, negative sense, nor do they describe it

as having much academic or cultural presence. They do not have very pleasant physical impressions. (A high score on Factor 2 describes a heavy negative feeling.) Finally, they do include some socioeconomic impressions in their description of the City. On Factor 5, however, there is a difference between Bankers and long-time inhabitants. While Bankers score considerably higher than Marketers on this factor, long-time inhabitants score only slightly higher than newcomers to the Region. Earlier this factor appeared to relate quite strongly to the community socialization portion of the composite variable as evidenced by scores of groups both in the Region. It also seems to relate equally as well to the socialization process of the organization as evidenced by scores of Index groups.

The Marketers and people who have spent less than the median number of years in the Region describe relatively more dynamism, a more pleasant physical impression and more academic and cultural presence. They do not seem to differentiate a dimension of socioeconomic impression as measured by Factor 4, however. While Marketers do score relatively lower than Bankers on Factor 5, Blandness, short-time inhabitants score only very slightly less than long-time inhabitants on this factor. This lends some weight to the idea that it is Marketers alone of the groups tested who perceive the City to be less bland than any other group.

Implications

There appear to be definite implications from these results for the implementation of an environment model. First is the general support of the existence of at least two different perceptions of the City by Bank officers. Differences both in some background variables and in some work-related variables have yielded predictable differences in an individual's perception of the City. The descriptions characteristic of groups of officers sharing a Banker-like philosophy and a background represented by a relatively long time in the Region are almost identical. In a similar manner descriptions characteristic of officers grouped as sharing a Marketer-like philosophy and a background represented by a relatively short time in the Region are also very similar.

While these factor score differences in themselves may not strongly support multiple perceptions of the City, they do lend support to the prior notion that such differences do in fact exist. These differences may result in arguments about future Model descriptions or projections, arguments supporting some general prior descriptions linked to an officer's banking philosophy and personal background. The simple existence of better information is not likely to change a description based upon these now rational foundations. A model-builder will have to account for responses to his new information source at least in part by recognizing these different perceptions and by recognizing which groups may hold which perceptions.

A second implication is that acceptance of the Model may be closely tied to the degree of opportunity the Model forecasts for the City and Region. Initially, Model information concerning dynamism and physical impressions will probably be easiest to acquire and use. The Bankers and long-time inhabitants already have relatively low estimates of dynamism and unpleasant physical impressions. A model would either reinforce these or indicate some more optimistic possibilities. Assuming more of a good thing is better than less, it is not likely that either group would resist implementation of a model yielding good news. Indeed, if news were not good, the model would still be seen as useful because it reinforced these groups' beliefs.

The Marketers and short-time inhabitants describe a more dynamic city, one conjuring a more pleasant physical impression. Optimistic Model forecasts would mesh with their current perceptions and provide a foundation for further acceptance. Forecasts describing the City in a Banker-like manner would run counter to a current optimistic perception of the City. This situation could cause a dissonance of importance to the Bank. If the dissonance were reduced by accepting Model information, Marketers would be forced to reevaluate their own opinions and beliefs. They may decide to leave the Region if their perceptions of future Bank growth, and hence personal growth, no longer seem feasible in light of changed knowledge about the Bank's relationship to North Harbor.¹ Of course, dissonance could also be

¹ J.G. March and H.A. Simon, Organizations, Wiley, New York, 1958, p. 94.

reduced by accepting model information and adjusting one's level of aspiration in the belief that all other employers will face similar unsatisfactory environments.¹

On the other hand, dissonance could be reduced by rejecting the Model and working on a set of incorrect estimates of environmental characteristics until they become so incorrect as to cause frustration. If the Model indicated that a description even more dynamic and pleasant were possible the Marketers, and short-timers would probably be disposed to accept that information at face value.

Briefly then, the possible outcomes reduce to those depicted in Figure 6-7.

Figure 6-7

Information on Factors 1, 2	Long-Time and Bankers	Short-Time and Marketers
Model confirms or is more optimistic than own description	Accept	Accept
Model is less optimistic	Accept	Accept-1 Accept-2 Reject

Accept-1. Leave Bank because relationship between the Bank and City no longer meets aspirations.

Accept-2. Stay at Bank but adjust aspirations downward as other opportunities seem to be fewer.

¹ Ibid., p. 101-102.

Region Factors

No extensive analysis of the Region Factors has been undertaken. There are three reasons for this. First, as described earlier, all contain substantial elements of personification. Second, they appear to reflect descriptions based upon a particular suburb rather than descriptions of the whole. Third, while group responses will differ according to some dimensions, these differences will add but little to knowledge about implementation.

CHAPTER VII

Assessment and Predictions Concerning Model Introduction

This research has described some Bank decision processes that take place in interaction with four relevant elements of the organizational system, the Individuals involved, the Tasks, the different Banking Philosophies, and the Perceptions of the Environment. The two processes selected by Bank management as the initial foci of Model implementation are the branch site selection and officer performance appraisal processes.

If implementation of the Model is to be successful, the builder must recognize the effects imposed upon the two decision processes by the four relevant elements of the organizational system. The description of branch site selection and officer performance appraisal in Chapter III plus the questionnaire analysis contained in Chapters IV, V and VI have led the author to a strong expectation that the availability of more and better information about the local metropolitan region of North Harbor will not, in itself, be sufficient to alter either decision process. The awareness and understanding of the decision process/organizational element interaction should enable the builder to better implement the Model into those processes and ultimately see the Model successfully implemented into both branch site selection and officer performance appraisal.

As used in this chapter, "successful implementation" means that Model information must be used by Bank officers as input to the branch site selection and officer performance appraisal processes to the extent that such information will affect those decision processes. That is, the Model must serve as an aid to management action. Beyond this basic criterion of success, a more optimum level of success would be recognition of the opportunity the Model affords for Bank strategic planning. Implicit in this more optimum level of success is the issue of top management involvement in Model implementation. To fully utilize the Model's strategic planning possibilities, top managers must be involved in Model use. This involvement must be built up from earlier involvement in the basic processes of branch site selection and officer performance appraisal. A more complete discussion of this involvement will be undertaken later in this chapter.

This chapter will assess and predict some occurrences along the path leading toward successful Model implementation. Included in this assessment will be discussions of the general timing of Model introduction, the choice of in-Bank Model sponsors, the predispositions of various classifications of officers toward computer applications, the effects of top management upon implementation, and the acceptance of the Model for use in branch site selection and performance appraisal. The Chapter will conclude with a suggested strategy for successful Model implementation.

A Short Review

Before the expected behaviors concurrent with Model introduction are discussed, let us briefly review what it is that the Model does. The environmental simulation the Bank intends to implement is a very complex, computer-based Model of the Standard Metropolitan Statistical Area of North Harbor. It can provide demographic and economic data disaggregated to the level of a single census tract (there are sixty in North Harbor) or aggregated to the entire SMSA. With a Bank-specific translator program it can convert much of its demographic output into the relevant dollar effects of a tract description. It can project descriptions five years ahead and develop current descriptions with errors no greater than $\pm 10\%$. It can provide a much greater amount of specific environmental information and also provide a quality of description including interactions among variables never before available to the Bank or, in fact, to any other organization in North Harbor.

Timely introduction, good sponsors and a group of interested, supportive initial users will all help insure the success of Model implementation into site selection and performance appraisal. Timing and an awareness of the systemic nature of the Bank will also affect top management's acceptance of the Model, a situation not directly part of the decision processes but nevertheless of some critical importance to an ultimately successful implementation.

UNDERLYING ISSUES

Timing

Timing includes both the general moment of Model introduction, the specific familiarization of potential users for each process in which the Bank has shown interest, and, perhaps, the further introduction of Model uses not visualized by Bank management.

In Chapter I the Bank's ongoing merger proceedings were discussed. These activities have effectively halted all branch expansion for over eighteen months. The merger has also introduced a level of anxiety into Bank officers' career prospects. Questionnaire responses revealed that most officers were moderately optimistic about the Bank's future. (See Appendix D1, question 140.) At least one group, Marketers, was noticeably less optimistic, however. Four specified the merger as being a major cause for their concern. Nevertheless, the Bank is firmly committed to pursuing the merger.

The builder must consider that until the merger is settled, there may be no action taken by the Bank concerning use of the Model no matter how important Model information may be. This means that it is unlikely that new sites will be actively sought. If the merger proceedings continue until June 1974, the Model could end up being used as an interesting research tool but never as an aid to management action. On the other hand, withholding the Model until conclusion of the merger proceedings is very likely to cause Bank officers to completely lose interest in it. The Model is apt to be very useful at the conclusion of merger proceedings. Win or lose,

the Bank will want and need to actively pursue alternative paths to growth. Sophisticated knowledge of some probable future environments could be very helpful at such a time. The period immediately following the merger results may also be one in which a critical evaluation of performance will be needed. The Model could be very helpful in acquiring and assessing some potential states of banking opportunity. In balance, therefore, the builder would probably benefit by introducing the Model before merger proceedings have been completed so that it will be readily available at a most important time in the Bank's corporate life. Until these proceedings are finished, he must be content to have the Model used only as a research tool.

Sponsorship and Initial Users

The second and third broad issues underlying Model introduction are the selection of Model sponsors and initial users. These choices could influence the "atmosphere" of early stages of Model introduction and in so doing have significant long-run influence upon its use in the Bank. These issues are closely interrelated. For example, an appropriate sponsor either will be a member of a group to which initial introduction may be appropriate or will be in a position to influence the initial user group in a way that is beneficial to ultimate success of Model implementation.

While top management support will be important to successful implementation, it is not very likely that either of the top managers will want to assist in the technical process of

implementation. That is, they will not want to perform either liaison or marketing tasks for any specific Model use. The builder will need someone in the Bank to represent him and to convey Bank officer questions and criticisms of the Model back to him. The Deputy Controller has been performing sponsor-like functions to date, but the Model itself has not yet been introduced for any use, and he is not actively involved in site selection or performance appraisal.

The builder may want to find a single sponsor for Model users in branch site selection and performance appraisal, or he may seek different sponsors for each initial Model use. A single sponsor would simplify many aspects of a builder-Bank relationship but may overburden the sponsor to the extent that he can cope with only one new use at a time, e.g., only site selection. Two use-linked sponsors would complicate the builder's relationship with the Bank but would offer a greater opportunity for joint introduction of the Model to different processes. The author's involvement with the Bank and knowledge of the officers leads to a recommendation of two, use-linked sponsors in spite of the extra cost to the builder.

Whether seeking one or several sponsors, the builder should look for individuals who 1) carry sufficient organizational influence to be listened to, 2) believe in the importance and improvement in the specific process(es) for which Model use has been sought, and 3) generally hold favorable opinions toward computer applications, especially environmental simulations. Builder and

sponsor in turn should seek to implement the Model through individuals and groups of individuals who favor the use of an environmental simulation for assistance in some decision processes. Some possible candidate groups have been identified by their banking philosophy, departmental affiliation, and individual level of professed familiarity with environmental simulations. (See Chapter IV for an analysis of banking philosophies and Chapter V for an analysis of opinions concerning environmental simulations.)

Since the sponsors and initial users could have a major impact upon successful implementation of the Model, the builder should carefully scrutinize any candidates. This scrutiny should consider the framework describing the effects of the relevant organizational system elements upon the site selection and performance appraisal processes. Chapter III described some effects of individuals, tasks, banking philosophies and environmental perceptions upon these processes. Chapters IV, V and VI supported the existence of differences in opinion and belief described in Chapter III. Specifically, groups of officers classified by differences in the organizational elements were found to hold different opinions and share different beliefs about general banking, performance appraisal, computer applications and the North Harbor environment. (See Appendices, D through E1.) In looking for sponsor(s) and in trying to implement the Model, the builder should seek individuals and groups who are interested in computer applications (see Appendix E) who believe in the helpfulness of Model assistance for decision

processes (see Appendix E and E1, question 160-161) and in the case of performance appraisal, individuals who favor some more quantitative input to evaluation. (See Appendix D2, question 143.) Responses to a Questionnaire polling fifty-two of the Bank's one hundred thirty-one officers revealed that not all officers would be equally likely to meet these criteria. In fact, individuals classified according to some particular political leanings, task groupings, and levels of familiarity with computer applications would probably prefer not to see the Model used in any Bank decision processes. Figure 7-1 shows a matrix of some categories of opinion and belief and some likely predispositions of various groups toward Model use.

Figure 7-1

Summary of Opinions and Beliefs Affecting Model Introduction

Likely Predis- position Toward Model	Opinions about General Banking Issues Expressed by Officers Grouped According to Banking Philosophy	Group
Likely to aid implemen- tation	<ol style="list-style-type: none"> 1) in general computers should be used for more than routine operations - more favorable than other groups' responses (Appendix D, #130 & 132). 2) customers behavior is not based upon traditional loyalty (Appendix D, #131 & 133). 3) not kept fully informed in job (Appendix D, #138). 4) relatively less optimistic of Bank future (Appendix D, #140). 5) favor taking action to remain competitive, preferably "new ways" (Appendix D, #134 & 135). 	Marketer
Neutral toward implemen- tation	<ol style="list-style-type: none"> 1) relative to other banking philosophy groups, believe experience is the best teacher (Appendix D, #129). 2) relative to others, less inclined to aggressively pursue new or old ways of making money (Appendix D, #134 & 135). 3) less involved. 	Middle group (no strong attachment to a philosophy)

Figure 7-1 (continued)

Likely Predis- position Toward Model	Opinions about General Banking Issues Expressed by Officers Grouped According to Banking Philosophy	Group
Likely to avoid implemen- tation	1) moderate absolute and rela- tive agreement that computers are best for routine opera- tions (Appendix D, #130 & 132). 2) strong absolute and relative belief in loyalty-based cus- tomer behavior (Appendix D, #131 & 133). 3) Bank future is bright (Appendix D, #140). 4) own future bright relative to others (Appendix D, #141). 5) favor taking action to remain competitive but preferably more of what Bank is already good at (Appendix D, #134 & 135).	Bankers
	Opinions Concerning Computer Applications (especially environmental simulations)	
Likely to aid implemen- tation	1) relatively strong belief that Bank should spend more time exploring environmental simu- lations (Appendix E, #157). 2) relatively strong willing- ness to spend extra time learning about environ- mental simulations (Appen- dix E, #165). 3) strong belief in helpfulness of simulations for decision- making (Appendix E and E1, #160 & 161, also Chap. V).	Marketers, officers familiar, branches or marketing Marketers, officers familiar, and operations & headquarters Marketers, officers familiar, branches & marketing

Figure 7-1 (continued)

Likely Predis- position Toward Model	Opinions Concerning Computer Applications (especially environmental simulations)	Group
Likely to aid implemen- tation	(continued) 4) only moderate belief that one must know what goes on inside a model to use it (Appendix E1 & Chap. V). 5) relatively strong belief that identifiable cost savings will be realized (Appendix E1, #166-169). 6) familiar with environmental simulations (Appendix E1, #153).	officers not familiar, branches & marketing, Bankers officers familiar . . .
Neutral	1) favor process simulations for spending own extra time and for Bank exploration (Chap. V, Figure 5-Appendix E, #154-157).	trust & lending, Middle group
Likely to avoid implemen- tation	1) favor Bank and own extra time spent exploring routine and operational applications more than simulations (Appendix E, #154-157 and Chap. V, Figures 5-8 & 5-9). 2) relative to other groups believe simulations won't help decision making (Appendix E & E1, #160, 161, Chap. V, Figure 5-7). 3) strong belief that a user must know what goes on inside a model (Appendix E1, #172, 173, Chap. V, Figure 5-10).	Bankers, operations & headquarters operations & headquarters, Bankers, officers unfamiliar with simulations Marketers, operations & headquarters

Figure 7-1 (continued)

Likely Presid- position Toward Model	Opinions Concerning Performance Appraisal	Group
Likely to aid implemen- tation	1) belief that quantitative standards are appropriate (relative to other groups) (Appendix D2, #143 and Chap IV, Figure 4-6).	East branch officers
	2) standardized appraisal format relatively inappropriate (Appendix D2, #142).	Marketers
	3) believe some output measure more appropriate (Appendix D2, #145 and Chap. IV, Figure 4-6).	Marketers, east branch officers
Neutral	1) more believe quantitative standards inappropriate (Appendix D2, #143).	Bankers
	2) believe more that standardized format appropriate (Appendix D2, #142).	Middle
	3) believe some output measures are more appropriate (Appendix D2, #145).	Middle
Likely to avoid implemen- tation	1) tend to believe quantitative standards are not appropriate (Appendix D, #143 and Chap. IV, Figure 4-6).	Bankers, west branch officers
	2) believe more that standardized format appropriate (Appendix D2, #142).	Bankers
	3) believe more that output measures are inappropriate (Appendix D2, #145 and Chap. IV, Figure 4-6).	Bankers, west branch officers

Using Figure 7-1 as a rough guide, a builder can see that on average groups most likely to aid implementation are Marketers, individuals familiar with a category of application, officers in branches and the marketing department, and for performance appraisal, Eastern region branch officers. Those least likely to aid in implementation appear to be Bankers, those officers not very familiar with a category of computer applications, and officers currently using computers in their work, e.g., Operations and Headquarters staff. No group in the sample proved to be hostile to the use of computers or simulation models. Officers in Operations, Trust, Lending and Headquarters responded as being considerably less confident of the possible help environmental simulations could offer to their decisions than did officers in Branch Administration and Marketing (Chapter V, Figure 5-7). This could be due to the relatively little relationship officers perceived between their decisions and the environment and to a lack of belief in the utility of computer simulations. It may also be further evidence of the lack of perceived task interdependence between Bank departments which was discussed under the Task element in Chapter II. Departments, and indeed individual officers, tend to perceive little relevance to themselves in processes in which they do not directly take part. Chapter III discussed such a situation in the branch site selection process, i.e., the lack of any felt need in lending or branch administration to actively partake in the site selection process.

In general the close correspondence of officers labeled Marketers to opinions favoring the use of innovative ideas in general and environmental simulations in specific cannot be escaped. Marketer-like thinkers who are also familiar with environmental simulations should be even better users, not only in the short run but even more so in the long run because they already have a knowledge base. Unfortunately, only two officers polled share both of these characteristics.

Several classes of officers, composed of individuals sharing like banking philosophies, perceptions of task or some individual level of familiarity with computer applications, have been identified as being agreeably predisposed toward environmental simulations. Some classes of officers have also been identified who may be ambivalent or neutral toward environmental simulations, and a third group has been identified, not as hostile, but as probably seeking to avoid implementation of an environmental simulation. Having identified these classes, it becomes necessary to further investigate some opinions and beliefs of those officers most likely to be the key actors in branch site selection and performance appraisal. Questionnaire responses revealed that of the three major actors in branch site selection described in Chapter III, two are Marketers (the Executive Vice President and the Statistician) and one is a Banker (the President). It seems likely, therefore, that the Model will at least be experimented with and evaluated in this process. For performance appraisal use, the East region branch

officers were found in Chapter IV to hold opinions concerning innovative ideas, environmental simulations, and the use of quantitative data during evaluation. Chapter III described a major difference in perception of task in branches as that between Insiders and Outsiders. The regional vice presidents each represented one of these perspectives. The East Region Vice President was described as an Outsider. The nearly uniform responses to performance appraisal statements from East region officers seems to reflect the regional vice president's Outsider perceptions and the effect of the system element Task upon the performance appraisal decision process. It is fortuitous to find a clear group of potential Model users for performance appraisal in branches because it is in branch evaluation that the Model use is sought. The East region officers could form a pilot study group and become a strong nucleus of support for further Model use.

Groups and individuals predisposed to use an environmental simulation are available in the Bank. The builder is fortunate in having some of them positioned to be natural initial Model users already partaking in decision process for which Model assistance is sought. Among those favoring innovations and advanced computer applications, officers identified as Marketers and in the Branch and Marketing Departments are recommended as initial users.

It will be necessary for the builder to find a Model sponsor(s) having a close working relationship with these agreeably predisposed groups of potential, initial users. As stated earlier, this sponsor must also be involved in current decision processes

relevant to Model use and must have sufficient influence to overcome any initial difficulties of implementation. An ideal sponsor, then, would have an influential job, be involved in a relevant decision process, be a Marketer-like thinker, and be familiar with environmental simulations. There are no officers in the sample who share all of these characteristics. It is not likely that there will be any in the entire Bank.

To be influential in getting the Model implemented in branch site selection or branch manager performance appraisal, the sponsor would need to be associated with branch banking. As described in Chapter III, the branch site selection process involves only three major participants, the President, Executive Vice President and Statistician. The most helpful sponsor in this trio would be the Executive Vice President. He has been involved in branch banking for more than twenty years and is a Marketer. He is not likely to be available for detailed sponsorship, however. In that event the Statistician must sponsor this Model application. A complete projection of Model effects upon the site selection process will be discussed later in this chapter.

For performance appraisal, sponsorship could rest with the Executive Vice President but is more likely to be effective if exercised by an officer of Branch Administration. As previously discussed, there is a distinct Outsider/Insider split in the banking opinions and attitudes of managers in the East and West regions. Sponsorship from one of these regions would probably result in the

other region's officers opposing the Model. Most central area officers and the Senior Vice President of branches hold opinions somewhere in between the East and West extremes. Only one of them is a Marketer, and none is very familiar with environmental simulations. The Marketer is a junior officer in a large branch. The Branch Senior Vice President is neither a Marketer nor very familiar with environmental simulations. He is a member of an "other" department described in Chapter V as relatively strongly believing in the helpfulness of environmental simulations for decision-making and favoring the Bank's exploration of such applications. He is also in a very influential position as the head of all branches. He has offered verbal support for some Model use in performance appraisal. His support is vital to eventual Model use in performance appraisal. He seems, therefore, to be the best choice for sponsor for that application.

An alternative sponsor, not directly associated with either decision process but influential for a long time in the few innovative undertakings of the Bank, could be the Marketing Senior Vice President. He has maintained the Bank's relationship with the Model builder over the years and enjoys the complete confidence of the Executive Vice President. His lack of direct influence in either prime decision process is critical, however. The Statistician, while in marketing, reports directly to the top two managers during site selection, and it is only as a member of the Senior Staff Committee that the Marketing Vice President gets involved in

site selection or non-marking performance appraisal. Nevertheless, this officer's influential position in the Bank and relationship with the Model builder make him a candidate for Model sponsorship.

Summary of Timing, Sponsorship and Initial Users

Thus far some discussion of the general timing, selection of sponsors, and identification of the predispositions of potential user groups has been undertaken. From this discussion specific recommendations have been made 1) that the builder introduce the Model to a few actual users prior to the conclusion of the merger proceedings, making it available at a time when new actions must be taken for future success, 2) that the builder select a Model sponsor for each of the initial decision processes for which Model assistance is sought, 3) that these sponsors be the Executive Vice President or Statistician for branch site selection, the Senior Vice President of branches for performance appraisal or the Marketing Senior Vice President in general, and 4) that for performance appraisal, branch officers of the East Region be initially used for a pilot program to build some confidence in the Model.

While recommendations for sponsorship and initial users have been made from classifications of officers most agreeably pre-disposed toward environmental simulations, there was no intention to infer that less agreeably disposed classes, e.g., Bankers, are overtly hostile to the Model. Rather their banking philosophies and opinions about computers are such that they generally do not see a use for models and would prefer to keep to a more traditional track.

Thus far, the underlying issues of implementation, Timing, Sponsorship and Initial Users, have been discussed. As the implementation proceeds, the builder will have to consider some likely occurrences along the path to success. Among these are the acceptance and involvement of top management and implementation in the processes of branch site selection and officer performance appraisal. Discussions of each of these major topics follow.

TOP MANAGEMENT ACCEPTANCE

The first and perhaps most critical acceptance must be from Bank top management. Their involvement and acceptance in these specific processes is necessary for any future Model use in strategic planning. In Chapters II and III top management was described as two distinctly different individuals, the Bank's President and Executive Vice President. These men hold different opinions on most matters involved in the Bank's current and future focus of activities. The President espouses a philosophy including traditional tasks and continued emphasis on commercial banking. He is a strong Banker. The Executive Vice President believes in more innovative tasks and believes in placing more emphasis upon retail or individualized banking services. He is a Marketer.

Between them, the President and Executive Vice President have maintained firm control over all of the Bank's activities. The Bank has traditionally been managed quite centrally from the President's office. Since the Executive Vice President has been given complete responsibility for three departments and the headquarters

staff, he has shared this control. Neither man is willing to alter the locus of control. As a result the functional area Senior Vice Presidents confer with top management regularly and actively look to at least one of them for approval of functional plans and progress. Programs in which top management is not interested usually die.

The delegation of Model use to subordinates, if undertaken by both President and Executive Vice President, will probably result in the Model's being used for no more than a substitute source for data currently available. Without some definite top management backing, functional area managers will not invest the extra time required to learn the Model's power because, as discussed above, they are so used to conferring with top managers and know that programs without top manager's interest usually fade. Some few officers may use the Model as an information source and actually experiment with it; most will ignore it until such time that they believe it may influence the Bank's future or theirs.

Paradoxically, if functional area managers see a serious split in top management's perceptions of Model usefulness and validity, they may not try to "sell" any Model-based analyses upward for fear that the approval of one man will be gained only at the expense of disapproval of the other. If functional managers do not try to sell their analyses to top management, it is likely that top management will lose interest in the Model. If this loss of

interest is continued it is again doubtful that functional managers will continue to use the Model as a device to assist changes in Bank plans or control systems.

In summary, the President and Executive Vice President espouse different banking philosophies and hold very different opinions and ideas concerning the Bank's current and future activities. This difference will probably cause them to perceive Model usefulness and validity differently. Functional management will be watching top management's reaction to the Model. Without some support from both top managers functional managers are not expected to experiment with or use the Model as an aid for planning or control. Should managers refrain from passing analyses up, initial top management support is likely to be eroded by a loss of interest. A builder will have to be alert to this political reality in introducing his Model.

Once introduced to the Model, top management is expected to follow one of three paths: First, both President and Executive Vice President may personally experiment with the Model. Second, the Executive Vice President may personally experiment with the Model, while the President delegates his share of the task to the Statistician, some other officer in whom he has confidence, or no one at all. Third, both President and Executive Vice President may delegate Model use to subordinate managers.

If both President and Executive Vice President personally experiment with the Model, they will each have an opportunity to acquire some better understanding of the Region and to link this

understanding to some possible overall business strategies the Bank might implement for future growth. The probability of this path's occurrence would be enhanced if the Model were sufficiently easy to understand and if, as discussed in Chapters II and VI, it provided information which suggested there were plentiful opportunities for growth available. Even so, this path's occurrence is very unlikely. Much post-merger information sought will be about areas beyond the Model's detailed coverage. In addition, the President is known to personally dislike "fiddling" with numbers.

The second path, wherein only the Executive Vice President personally takes an interest in the Model, is very likely, as is the delegation of the President's interest to the Statistician. The outcomes of this path will depend greatly upon the number of opportunities suggested by the Model.

Portrayal of a munificent local environment will encourage these two Marketers (Executive Vice President and Statistician) in their desires to exploit opportunities not currently being pursued. Both would probably view opportunities in terms of new branches or new types of customers, and their individual uses would reinforce each other's perceptions of the environment. New branches would be welcome opportunities to the Executive Vice President because they would increase the size of his departments, possibly at the expense of Trust and Lending if a larger share of scarce resources was reallocated to branches. The expansion of branches would fit his perception of the Bank's overall tasks. This mutual encouragement on the

parts of Executive Vice President and Statistician may be unfortunate for the overall success of the Model. The President could find the Model as reported by the Statistician supporting a banking philosophy he did not share and a departmental emphasis he did not want. Because he initially delegated Model use to the Statistician rather than learn its capabilities, the President would be unable to comment upon its output in response to arguments put forth by the Executive Vice President and Statistician. Unless the Statistician reports opportunities for the Model that fit the President's plans for traditional banking, the latter may reject the Model rather than admit to the opportunities in a different line of work. The builder should be aware of this possibility and make an effort to offset it by trying to gain some presidential support.

Model portrayal of a hostile environment could jeopardize its successful implementation through the Executive Vice President and Statistician. As discussed in Chapter VI, the officers sharing a Marketer philosophy of banking perceive the City as much more dynamic and pleasant than do Banker-like officers. A hostile description from the Model could be rejected to reduce a dissonance between what is and what is perceived by Marketers as necessary for Bank and individual growth in North Harbor, namely a dynamic and physically pleasant city. The strong Marketer backing for the Model already existing and a Marketer bent toward innovation will probably minimize this risk and may influence a changed perception on their part. This

is a good reason to work with using officers to reconcile their current perceptions with descriptions generated by the Model. A statement of the possible conflicts due to differences in individual perceptions and Model descriptions may be found in the summary of Chapter VI.

This second path, while quite likely given the current sociopolitical system in the Bank, is not at all preferable from the perspective of successful implementation. Either pleasant or hostile descriptions of the City's future could result in the same outcome, i.e., the President would begin to ignore the Model in preference to his intuition while the Executive Vice President would favor it.

If both the President and Executive Vice President delegate use of the Model to subordinate managers, these officers would have to experiment and develop some projections of future opportunities without benefit of top management thinking. Having made some analyses, they would then have to "sell" their proposals to one or both of the top managers. Thus they would find themselves in the position described earlier. Without active support from the President and/or Executive Vice President there would be no incentive for these managers to aggressively experiment with any model. This lack of incentive, plus the realization that any analysis sold to one member of top management may cause some disapproval from the other,

is expected to thwart successful Model implementation for strategic planning. Of course, the possibility that an influential functional manager may grasp the relevance of the Model for future Bank strategy cannot be ignored. At least two branch managers, a vice president and the Deputy Controller, are aggressively interested in marketing bank services and may be able to influence top management to act on their suggestions. To the extent that these officers are successful, the joint delegation of use by both top officers is preferable to that of having the Executive Vice President personally explore with the Model while the Statistician stands in for the President. This third path is still not preferable to the first, the personal interest on the part of both the President and Executive Vice President. The preferred path, that which is most strongly recommended, is the support of both top managers.

The extent to which the Model will be used in assisting some Bank management strategic planning and control functions, as opposed to providing an automated data base for generating Comptroller of Currency required data, will be heavily dependent upon the path top management takes toward acceptance. The Model is expected to be used to its fullest capacity if both top managers personally experiment with it (Path 1) or, at the very least, actively support it. In this case this support will be difficult to achieve because "top management" is not a united whole. Top

management is two men with very different perceptions, opinions and beliefs about banking and the Bank.

If either Path 2 or 3 is followed, efforts by the builder to encourage an open facing of differences and conflict in the Bank would facilitate Model use. Historically, conflict has not been dealt with openly in the Bank. In 1954, Argyris noted that, "it would be helpful for [the operating officers] to become aware of their own feelings about their inability to communicate freely with one another."¹ In 1968, the Bank's Board of Directors, rather than face the fact of there being only one President, artificially split the organizational structure between the two top men. In observed interactions of President and Executive Vice President, the former regularly changes the subject rather than respond to argumentative statements by the latter concerning the merger and future course of the Bank. Constructive conflict would, then, be a major change in the Bank. The Model could be a device for conflict precipitation and could serve as a neutral agent in facilitating negotiations among officers sharing opposing points of view concerning the Bank's future course of action. Of course using the Model as an instrument for organizational development will pose some serious problems for the builder. While his Model could become an integral part of strategic

¹ Chris Argyris, "Human Relations in a Bank," Harvard Business Review, Sept.-Oct., 1954, p. 71.

planning if negotiations were successful, he and his Model could become scapegoats if negotiations broke down, whether the conflict exploded into open hostility or was smoothed over in line with past Bank traditions. The builder will have to become heavily involved if the Bank focuses resolution of conflict upon Model-based negotiations. Model limitations as well as Model strengths will need careful explanation.

Alternatively, the builder may side step the potential resolution of conflict issue by only familiarizing the potential user groups favorably predisposed toward the Model, with its use and capabilities. This course of action will probably yield some benefits from branch planning and other activities under the cognizance of the Executive Vice President. As discussed earlier, it is very likely to exacerbate already strained relationships at the top, however, especially if plans developed using Model-based analyses run counter to the President's traditional, Banker-like thinking.

Some Elements of a Strategy to
Gain Top Management Support

At present the Bank, i.e., the Executive Vice President and Senior Vice President of Marketing and Branch Administration, has chosen to try to use the Model in the branch site selection and performance appraisal processes. The President has agreed to some initial exploration of the use of the Model, including this research. Getting the President more involved in this initial work would pay

great dividends during the critical period of Model introduction for reasons already discussed. Possibilities include general briefings and discussions about what information he might expect from a model and some builder-hypothesized uses for such a model. These uses should be in the areas of interest of both top managers. For example, geographic or industry-focused loan policies, in addition to branch expansion policies, could be formulated with model assistance. It is essential that the Model be portrayed to top management as a neutral supplier of information. The Model may be introduced to interested groups of potential users, but it should not be portrayed as being useful only to groups initially interested. It is the skill and insight of the users and the extent to which they can incorporate Model information into their existing "maps" of the Region which will prove its usefulness.

The interactive routines linking the user (a Bank officer) to the Model (a mathematical simulation) should be carefully constructed to be easily usable by practicing Bank officers. While officers using the Model, even senior officers, must invest some time in familiarization with the Model, this time should be minimized. At the same time, consideration should be given of how to reconcile numerical and pictorial output of the Model with officers' current perceptions of North Harbor and the region. These current perceptions are by and large organized intuitively. Even those officers with systematic maps of the local environment very probably are not even aware of the existence or significance of

large numbers of variables which contribute to Model descriptions and projections. Some ways of relating individual cognitive maps with analytic Model maps must be addressed by the builder. To assist in gaining acceptance and encouraging use by both top managers, the builder should discuss the Model and its applications with both top managers, suggest and encourage possible use in several functional areas in addition to Branch Administration, and take great care to provide interactive routines easily usable by practicing Bank officers who are not experienced model users.

IMPLEMENTATION IN THE BRANCH SITE SELECTION PROCESS

As described in Chapter III, the branch site selection process involves three central participants, the President, Executive Vice President and Statistician. There have been no new branches built or bought since 1970, the merger excluded. A request for a branch some thirty miles to the south has been disapproved by the Comptroller of Currency, and another request for a third satellite branch in a suburban community adjacent to North Harbor is pending. Opportunities are continually changing. The information generated by the Model will not alone spur increased branching activity. Completion of the merger proceedings will provide the required impetus, however. At that time, the Bank will be looking for good growth opportunities. It is likely that the President and Executive Vice President (assuming no changes in organization) will continue to seek information about and explore opportunities from

their traditional professional and social sources during the critical period of introduction, just as they have done during the merger hiatus. It seems quite unlikely that they will immediately appreciate the significance of Model-generated information in searching for new sites. They will probably prefer to buy a well priced small bank in a declining town rather than build, even in an area the Model predicts will expand to support quadruple its present banking business in five years. During this initial phase, the Model can at least help them avoid downside risk, however, by revealing areas rapidly declining.

Model Use by the Statistician

Whether the Model does any more than duplicate current checklist requirements will depend to a great extent upon how it is used by a single individual, the Statistician. His use in turn will depend, among other things, upon his perceptions of the top managers' perceptions of Model usefulness. If the top managers indicate belief in Model usefulness, the Statistician will use it. As discussed in Chapter III, his reputation is built on gathering data deemed important by top managers. The Statistician is a member of the Marketing Department and is a Marketer-like thinker. Currently he is the sole source of specific data about potential branch locations, their prospects, strengths and weaknesses. He has a large stake in the Model. He may well perceive the Model as a threat to his job. Imagine a Vice President replaced by a computer! Without strong reason, e.g., top management interest, the Statistician may minimize

the usefulness of the Model in site selection. This tactic would assure him of the continued importance of his job as it is currently structured. He would continue to be the sole source of much of the raw data used in branch site evaluation. He would continue to be an information supplier. He would not, however, be recognized as an information analyst or a strategic planner. The first indications that the Statistician is employing the tactic of minimizing Model usefulness are likely to be an emphatic statement that the traditional, non-Model sources of data are the only ones allowable by the Comptroller of Currency and his insistence that the Model does not provide the "right" data, right as compared to his own intuitive model of the Region.

Paradoxically, it is the Statistician who can initially make the best use of the Model. He is aware of the impact of environment on banking, believes in searching for alternatives (even though he doesn't), and is familiar with Model terminology. His active search of the environment could probably spot hidden opportunities most rapidly. This search could markedly change his role in the decision process from that of information checker to that of action initiator. This role change would, in turn, affect the roles of both President and Executive Vice President with respect to expansion of branches. It is not clear that they would accept the Statistician's new input and allow him to share their role. It is

not clear that they will not either. It is clear that if the Statistician successfully adopts a co-initiator role using the Model, rather than social or professional contacts by his superiors, as his opportunity generator, the branch site selection process will have been substantially changed. Now alternatives will be capable of being generated at a low cost providing the description of the environment is favorable enough to support some branch expansion. A key issue is once again having the President and Executive Vice President accept this information as equally as valid as data received from more traditional sources.

Model Use by "Bankers" and
the Senior Staff Committee

Thus far, the discussion of possible Model impact upon the branch site selection process has assumed that the President would support profitable expansion of the branch network. It is not obvious that he would do that. His unqualified support of the merger stems from his conviction that the Bank's future task requires a big asset base that should include an expanded commercial loan portfolio and not an investment in branch site real estate. A sizeable number of Bank officers share his traditional "Banker" point of view. In addition to the informal influence they might assert as a group, these Bankers are represented by two members of

The Senior Staff Committee, Senior Vice Presidents for Lending and Trusts.

Under its current modus operandi, the site selection process involves the Senior Staff Committee only as a group confirming top management's choice. Access to the Model could change that. If the Statistician can reach for a share of the action in site selection so can members of the Senior Staff Committee. Likewise, if the President can be reluctant in supporting model-derived information, so can a Banker member of the Senior Staff Committee. Both actions would pull them into a more active role in the site selection process. Model use in the Senior Staff Committee could expand the feelings of task interdependency which, as described in Chapters II and III, are currently almost absent in interdepartmental relations. Mutual access to a single information source could readily provide a vehicle for dialogue between heads of Bank departments. This dialogue, in addition to revealing task interdependencies, could serve as a negotiating tool to discuss conflict between the basic philosophies just as it may mediate between the top managers. The builder should encourage Senior Staff Committee use of the Model to 1) expand the Intelligence and Design phases of site selection, 2) encourage recognition of task interdependencies, and 3) provide a vehicle for open discussion of the different banking philosophies and the Bank's future.

Recognition of a User's Stakes in the Model

It must be emphasized that in each decision process the Model may affect, it is not the presence of more or better information alone which will influence the process. It is the validity of information as perceived by the relevant individuals, the effect of the possible changes upon current perceptions, tasks, and the possible consequences of Model use for particular philosophies of banking, e.g., Banker or Marketer; in effect, it is their stakes in the Model which also play leading roles in Model acceptance. For the Statistician, stakes are possible gain in influence in the site selection process versus possible loss of the bulk of his job. For top management, the Model may portend the necessity of sharing hitherto exclusive power and may upset a delicate balance in the power between President and Executive Vice President. For members of the Senior Staff Committee, the Model could gain them an increased voice in the site selection process or could challenge their current perceptions of the local banking environment. The builder assisting Model implementation must recognize these often conflicting user stakes in the Model's use in the site selection process. This means someone very familiar with the Model and informed about banking in the region must be on hand during the Model introduction to coach and interact with the initial users and potential users. Any discrediting of the Model by one of these officers must be viewed through nonrational as well as rational

lenses. It would be fatal for either builder or users to take the dogmatic position that the other group is either naive and uninformed or hopelessly carried away with irrelevant mathematics.

Summary

The Model will affect the site selection process and be affected by it in at least four ways. First, it could provide the opportunity for an expanded number of participants to take an active part in the decision process if the strategy of implementation chosen makes this possible. These new participants are likely to be the Statistician and some members of the Senior Staff Committee. Second, it will require top management to explicitly consider the information supporting their choices. They may not believe in the Model's usefulness because it conflicts with their current, intuitive map of the region or it appears to structure and quantify the important variables previously evaluated judgmentally. Even these arguments against the Model and any subsequent refusal to consider Model-supplied information will have resulted in some increased awareness of the many environmental issues involved in planning for the future. On the other hand if top management accepts the newly structured data generated by the Model as helpful for strategic planning, they will be able to capitalize on the added efforts of the potential new participants in the process and upon any increased recognition of the interdependency of departmental tasks. Third, the use of the Model as a support for new branch decisions will support only one of two major philosophies concerning Bank future, the innovative,

individualized service philosophy. The traditional bankers are not involved in branching and do not perceive it as supporting their point of view. Opposition to the Model may arise which is really opposition to a basic philosophy of banking. The President has initiated and many officers support a merger for the purpose of pursuing a traditional type of banking - large-scale, commercial banking. The Model may serve to facilitate negotiations between officers espousing both philosophies. Fourth, the Model will force present and potential participants in the branch site selection process to reexamine their perceptions of the North Harbor region. This reexamination will probably reveal many differences between Model descriptions and individuals' intuitive beliefs about North Harbor. It is critical for continued use of the Model that these differences be reconciled in a constructive manner.

Model use in branch site selection may, of course, also have some disadvantages. First, it could aggravate an already serious split in banking philosophies and could further harm the relationship between President and Executive Vice President. It could do so by being used as a wedge or bludgeon favoring Marketer-like thinking and tasks at the expense of more traditional banking rather than by being used as a neutral information source enabling all users to chart a more successful course. This situation, in turn, could lead to further isolation of departments and even less of any feelings of task interdependency. If used, the Model could lead to the creation of many self-fulfilling prophecies. For example, the Model predicts Area X will grow very rapidly in the next five years. The Bank

builds a branch, word gets around that growth is expected.

Commercial enterprises build near the Bank using Bank construction loans. Families, seeing new, convenient stores buy and build in Area X and so it goes. It will probably be very hard to tell whether the Model predicted correctly or strongly influenced reality by its prediction. An opposite situation could occur in neighborhoods projected to rapidly decline. This happening may not be directly disadvantageous to the Bank but ramified consequences of such occurrences could seriously alter the North Harbor region in ways not foreseen, expected or understood.

In balance, however, the potential advantages from Model use in site selection outweigh the potential disadvantages. The four changes could substantially benefit the Bank.

Should the process be affected in these four ways, there is a strong probability that the Bank will interact more effectively with the site selection sub-environment. At the very least more interdepartmental activity could occur, and the two different banking philosophies could openly negotiate to improve the Bank's future. These seem to be very desirable outcomes. They may never be fully realized. It is important, however, that the builder recognize the beneficial impact the Model may have upon the Bank's social system as well as the possible harm it could work. Recognizing this possibility of benefit, he should employ a strategy which will at least provide a foundation for the Model to be fully integrated into the Bank's organizational system.

Some Elements of Strategy to Achieve Useful Implementation
of the Model in the Branch Site Selection Decision Process

The importance of the continued support of the President and/or Executive Vice President is underscored in the initial discussion of Model implementation in the branch site selection process. It is unlikely that many subordinate officers, especially the Statistician, will pursue the Model for any analysis without some strong signals of support from the top. This means top management's attention, knowledge, and questions not just their lip service. This support and interest are not prevalent in current Bank practices. As a first element of strategy in Model implementation for the branch site selection process (and probably any other specific process), the builder should make every effort to gain the support of the President and Executive Vice President.

Builders should spend some time with potentially key participants, e.g., the Statistician and members of the Senior Staff Committee. At the same time they should make some effort to educate lending and even trust officers in the uses of the Model, suggesting possible uses if necessary. At all costs, builders must interact with potential users as equals and not try to impress them with builder terminology when it is banking terminology to which they must relate the Model.

Finally, some attention should be given to describing what the Model is and does, where it gets data, how it acts on that data, and what it describes to a user. Responses described in Chapter V

indicated that officers most favorable toward Model use wanted to know "what went on inside." While political, organizational and individual considerations will affect the Model's use and acceptance, it must be clearly understood that the Model itself is free from these biases. A statement to such effect will not in itself suffice. The officers will want to evaluate Model output themselves. A complete strategy for implementation will be put forth after a discussion of Model use in performance appraisal.

IMPLEMENTATION IN THE PERFORMANCE APPRAISAL PROCESS

The performance appraisal decision process differs from the site selection process. It is an element of management control while site selection is an element of strategic planning. As such it is a rhythmic process repeating itself annually for each officer in the Bank. At present it requires accumulation of information which is disaggregated and available only over time to be effective. That is, information used in the performance evaluation of an individual officer must be relevant to that particular officer's work and not to the Bank as a whole. Performance appraisal is intimately linked to an officer's career path. Any changes in whatever appraisal system is currently used will undoubtedly be weighed by each officer affected relative to the possible impact on his or her career. Because it is linked to careers, performance appraisal involves many officers at all levels in the Bank rather than the very few officers

associated with site selection, i.e., a change in performance appraisal for a few will probably affect the entire process and ultimately all officers.

The type of information, links to career paths, and numbers of officers actively involved in this process set a very different stage for Model introduction in performance appraisal than was described for Model introduction in site selection. Chapter III described the current performance appraisal system as the product of an evolutionary process being continually updated as the Bank grew in complexity. The great majority of officers are at least somewhat satisfied with that system. As discussed in Chapter IV, they by and large favor a standard system. There is very little support for a shift to a quantitative information-based appraisal system. (See Appendix D2, #143.) What support there is, is with East region branch officers. This group of branch officers is very interested in using quantitative data as an element in performance appraisal.

The Model can provide some useful, quantitative information for performance appraisal in cases where an officer's job is directly linked to the marketplace. Branch managers, loan and trust officers fit these criteria to some extent. It is in branch manager performance appraisal that the Bank wants to use the Model. To the extent that some branch managers favor the use of additional quantitative information, the Bank's choice appears to be a good one.

Issues in Model Implementation in Performance Appraisal

The road to successful implementation is difficult at best. In addition to the potentially explosive nature of the use of quantitative information and opposition to such information by many officers, the large numbers of officers involved, and the personal nature of the appraisal, the same issues of top management acceptance, conflicting banking philosophies, and reconciliation of personal, largely intuitive descriptions of North Harbor with those generated by the Model, all affect implementation here as much as they did for branch site selection.

It is quite likely that the Branch Senior Vice President and his assistants, the regional vice presidents, will be the individuals who initially use the Model in this process. They will probably attempt to improve their intuitive feel for the banking potential in some specific branch areas with the objective of formulating some criteria for performance standards applicable to each area. This use will depend upon their reconciliation of Model information with their intuitive feelings about various branch areas. As described in Chapter III, these vice presidents recognize some differences in the environments of different branches, but they do not have any specific, quantitative support for their descriptions. The Model may challenge these current individual descriptions and introduce a substantial amount of uncertainty into the picture by providing many interrelated estimates in lieu of vague but simple generalizations. Branch administration vice presidents will have to be

able, with builder assistance, to reconcile the two types of descriptions.

The possible differences in officer response to the Model dependent upon its projection of a munificent or hostile local environment have been discussed in Chapter VI and, with respect to site selection, earlier in this chapter. East region officers share a Marketer-like banking philosophy. The builder should be aware then that he may need to more carefully work to reconcile individual and Model descriptions of the environment if the Model descriptions are hostile than if they portray plentiful opportunity,

Even assuming that users do reconcile their own and Model descriptions, and do come to perceive these descriptions as valid and useful, severe obstacles remain before the Model is successfully implemented into the performance appraisal process.

The personal impact of performance appraisal on every officer's career sufficiently raises the individual stakes to ensure that any new input into the process will be scrutinized in depth. The Model will be such a potential input. It may well be further scrutinized because it is a Model rather than a human evaluator. Officers may carry a perception of their being evaluated by a machine if the Model is used rather than the perception of its being an aid to evaluation by other humans. At any rate, a great number of officers in addition to the few initial users will want to learn as much as they can as soon as it becomes possible that they will be at least partially evaluated upon their market performance relative to some model

projection. This requirement to familiarize and educate a substantial number of officers will be time consuming and expensive for senior branch officers especially. On the other hand, failure to provide this familiarization could well cause a groundswell of opposition to eventual Model use.

To have any lasting impact upon performance appraisal, the Model-assisted evaluations will have to be supported through the series of review processes. The increased rigor of a quantitative-based appraisal entails a major change in officer thinking and will be a difficult change for many officers to accept. (See Bankers responses to question #148, Appendix D2.) The failure of the system to carry through with individualized appraisals and to transform them into individualized raises and promotions will, however, finish any further use of the Model in evaluating performance. Again, as was the case with branch site selection, the support of the President and/or Executive Vice President will be necessary to ensure that the individualized raises and promotions are forthcoming. Even this support may not be enough if functional departments not using the Model actively oppose any special consideration being given to any officer's raise or promotion just because he compared favorably to some quantitative "black box." Some model use by the Lending or Trust departments may reduce such active opposition to Model-supported evaluations. Some jobs in these departments are closely linked to the environment, e.g., a commercial or mortgage loan officer or to a lesser degree a trust officer. For such use to occur, however, the Model will have to be

introduced and accepted as useful by those departments or at least by some influential sponsors in those departments. Members of the Senior Staff Committee could be such sponsors.

The differences in branch officer task perception discussed in Chapters II and III could substantially affect any Model use in performance appraisal. The Model will not benefit Insiders and Outsiders equally. The acceptance of Model output and derivation of quantitative performance criteria therefrom will benefit primarily Outsiders and an Outsider-like view of performance appraisal. Insiders may suffer from this modification of performance appraisal. The Model cannot provide criteria to gauge the internal effectiveness of a branch. There are no quantitative standards for internal effectiveness now but if there are none after they exist for market effectiveness, internal effectiveness will probably cease to be a significant element of appraisal. The many Insiders, including the West Region Vice President who encourages Insider values in performance appraisals of his branch officers, are likely to resist such a situation no matter how accurate the Model projections of current and future banking potentials. The builder could encourage some Insider-oriented quantitative measures apart from his Model. At the same time, he should be aware of possible negative reactions to an over-quantified appraisal system. It is conceptually easy to offer remedies for a situation in which appraisal came to be based only upon comparisons of actual financial performance (loans, demand deposit growth, etc.). These remedies would include specific weighting schemes and comments on appropriate traits as are

used now. It is more difficult to avoid Gresham's Law in practice. Quantitative appraisal data could drive out qualitative information. The builder cannot prevent this. He can encourage Model use in balance with non-quantitative information both insider-oriented and outsider-oriented.

Finally, for the Model to be accepted as a useful tool in performance appraisal it must be accepted by officers holding both Marketer and Banker philosophies of banking. While this acceptance would be good for most decisions, it would be important for any Model use in performance appraisal because officers sharing both Banker and Marketer philosophies of banking populate every functional department. This is particularly true in Branch Administration where the branch managers are clearly split on their views of banking.

Summarizing thus far, there are five major roadblocks in the road to successful implementation of the Model as a tool for assisting performance appraisal. They are 1) The Model will require some reconciliation of current officers' vague descriptions of North Harbor with a quantitative, numerical description reflecting hundreds of interacting variables. 2) The Model will need to be introduced to many officers potentially in a position to be evaluated at least in part by comparison to some Model standards. 3) Recommendations generated in Model-assisted performance appraisal will require considerable top management support to ensure that individualized performance appraisals are recognized during reviews. 4) The

quantitative nature of the Model assistance may worsen the Insider/ Outsider split in branch officers with only Outsiders in favor of a more quantitative approach. 5) At some point the Model must be accepted by officers not sharing a Marketer philosophy of banking.

These are substantial roadblocks to successful implementation. Three of them, 1), 3), and 5), may be reduced or even eliminated if the Model is introduced to performance appraisal subsequent to rather than simultaneous with site selection. The experience gained by introducing the Model to a small group of users including the President and Executive Vice President could be used to advantage in introducing it for performance appraisal. Good will and Model familiarity built up during the initial Model introduction to branch site selection would also create some foundation for implementation in performance appraisal.

Some Advantages and Disadvantages of Model Use in Performance Appraisal

While the roadblocks to Model implementation in performance appraisal are many and severe, the possible advantages are also plentiful and encouraging and may provide a basis for a strategy of implementation. The Model could provide a detailed picture of which kinds of business (commercial or retail, deposit or loan) are where, today, next year and five years ahead. These projections could provide a firm foundation for negotiated performance budgets in every branch. While it is not being stated that such budgets should be negotiated or that, if set, they should be the sole element in a

performance appraisal, it is being stated that such information could be useful to branch manager and top management alike and that such information could aid in planning and in control.

Model information would emphasize the importance of a branch's local environment. It could do so at the expense of a falling quality in internal control. It need not do so. At present, much is known about internal efficiencies relative to the branch environment. As a result, much of the current appraisal is internal procedure and personal-trait oriented. Use of more environmental (outside) information would provide a more equal emphasis of two coequal requirements.

Model information could provide a device for staffing branches as well as evaluating their performance. A branch area in which the commercial potential was seen to be rising would probably do better if at least an assistant manager with a strong commercial lending background was assigned. A branch in a rapidly expanding suburb might, on the other hand, be better staffed with a manager strong in gathering new accounts in a highly competitive neighborhood. This would be different from the professed Insider/Outsider policy. Staffing this way would be based on critical segments of the branch sub-environment.

Finally, Model information about various branch areas could serve as an integrating device for the various functional departments. That is, it could illuminate some interrelationships

among various branch tasks which reflect interrelationships among the basic departmental tasks. Team exploration with Model output could assist in expanding total Bank market share.

Model use in performance appraisal could be disadvantageous as well. The Model could lead to consideration only of quantitative performance data at the expense of some valuable non-quantitative data. It could further separate the branch administration from the remainder of the Bank, especially from those departments not as directly linked to the local environment. Finally, as with its use in site selection, the Model could further separate Bankers and Marketers by focusing only upon the apparent interests of the latter.

In balance, however, the encouraging opportunities sufficiently outweigh the discouraging possibilities to allow a successful implementation in performance appraisal, providing that potential users are informed of what some opportunities might be, and that the builder recognizes that the goodness or badness of Model-supplied information will not alone facilitate or hinder successful implementation. The individual stakes, role requirements, and banking philosophies espoused by user officers will all shape their response to and eventual acceptance of the Model. Some possible elements of a strategy for Model implementation for performance appraisal assistance will be discussed next. Following that will be a specific recommended strategy for Model implementation in the Bank.

Some Elements of a Strategy for Successful Model
Implementation in Performance Appraisal

The complexity of the introduction of the Model for use as a tool in performance appraisal has been discussed. A strategy for successful implementation must consider this complexity. The key elements in this strategy are 1) the timing, 2) the selection of internal sponsor(s), 3) the scale of initial implementation and 4) the extent and substance of model familiarization for all potential users.

Complexity of application will cause a large increase in the time of Model implementation. The builder should consider whether or not the Model will be introduced to the President and Executive Vice President, the site selection users, and performance appraisal users at once or whether it should be sequentially introduced to officers involved in the two decision processes. Sequential introduction may allow confidence gained in earlier Model applications to support further use in performance appraisal. Simultaneous introduction may better illustrate the wide range of use to which the Model may be put.

The choice is closely tied to Model sponsorship within the Bank. The sponsor for performance appraisal will probably not be the same as for site selection unless the Executive Vice President acts as sponsor for both applications, a very unlikely event. If the sponsors do not conflict with one another and are widely respected, simultaneous introduction may be possible. As suggested

earlier, the Executive Vice President for site selection and the Branch Senior Vice President would be ideal sponsors. The Marketing Senior Vice President may be chosen but will need to work closely with someone in branches for this use. In either of the latter two cases, the builder would interact primarily to handle sponsor/Model problems and allow the sponsor to support, implement, and familiarize others with the Model. For performance appraisal, however, it is doubtful that the sponsor will be able to familiarize all of the officers needing to understand the Model with its working and use. The builder will have to assist. A strategy of sequential implementation will be recommended and discussed shortly.

Reducing the scale of initial introduction may greatly lessen the problem of builder tutoring. A pilot group of the branch officers reporting to the East Region Vice President could be the initial Model users. Their acceptance of and success in using the Model would be compelling support for its further use, especially if they obviously improved in performance, as measured by current standards. Of course, their rejection would virtually doom any further use of a quantitative model in performance appraisal. They responded very favorably to quantitative standards, output-oriented appraisal, and nonstandard format, however (see Figure 7-1).

For successful implementation, the users must be familiar with what the model is and does. At present it is a very black box. Performance appraisal is vital to individual officers' careers, and for this application they will want to know how the Model works in

considerable detail. As was the case for site selection users, this familiarization should portray the Model as a neutral purveyor of important information. Users should be considered equals to the builders using different maps of the same territory. While the primary users are likely to be branch managers, care should be taken to indicate that the Model itself is neutral to different points of view in the information it provides. The Model will be more likely to succeed if user skill is seen as the key ingredient rather than membership in any particular department.

Obtaining the sponsorship of the Senior Vice President for Branch Administration and the parallel approval of a pilot program composed of the East Region Vice President and his branch officers would, as stated earlier, provide compelling support for wider Model use. If these managers were able to negotiate objectives for their own branch areas and then accomplish these objectives, branch officers not using the Model to explore their current and future potential would soon be called upon to defend their current performance. Once it was established that the Model was really capable of estimating banking potential, managers would need to know about their branch potential in order to be competitive in budget and appraisal negotiations. The nucleus of experienced users from the pilot program would be able to familiarize the remaining officers as Model use spread. The builder would avoid becoming a tutor and could concentrate on reducing major problems that arose in any application.

To summarize, the builder may find it advantageous to time his introduction for performance appraisal to build on previous introductions to the President, Executive Vice President and branch site selection users. An influential sponsor and pilot program would minimize the initial problems of acceptance if they are well respected and already in favor of more quantitative information. Familiarization and education in Model workings and capabilities remain as important to this application as to site selection or to any other Model use.

A SPECIFIC STRATEGY FOR MODEL IMPLEMENTATION IN THE BANK

As the chapter has unfolded, some possible elements of a model builder's strategy have been discussed. These include some considerations of timing of the introduction, choice of initial users, selection of in-Bank Model sponsors, steps to aid top management acceptance of the Model, and procedures to enhance the probability of success in implementing the Model in Branch Site Selection and Officer Performance Appraisal. As a conclusion to the discussion of this chapter a specific strategy will be recommended.

The initial Model introduction should be timed to coincide with some period of Bank demands for information about the environment. As discussed earlier, such information will be in great demand at the conclusion of merger proceedings. These proceedings may be terminated in the spring of 1973. It is fortunate that the Model is about complete technically and the builder may, therefore, be able to introduce it in late April or May of 1973.

Should the merger proceedings be extended for any length of time, initial introduction may be delayed until the President and Board of Directors decide to pursue non-merger expansion opportunities.

The initial introduction of the Model should be to a small group of officers likely to be influential in the introductory phases of Model use. The Deputy Controller, as a member of the Senior Staff Committee, and the Marketing Senior Vice President, as a long term supporter of innovative techniques and colleague of top management as well as a member of the Senior Staff Committee, would be a good pair. Following this first introduction, the President and Executive Vice President should be familiarized with Model usage. The Deputy Controller and/or Marketing Senior Vice President should also be at this meeting to assist in communicating the Model's capabilities. It is crucial that the President not feel ignored in this meeting. The Executive Vice President will probably assimilate Model output rapidly, but the President may not. It would be natural to encourage the former when it is the support of the latter which is uncertain but very important. It is very possible that the Deputy Controller, Marketing Senior Vice President and Executive Vice President will assist in educating the President. They cannot, however, assist in reconciling Model output and use with his Banker viewpoint or intuitive skills in leading the Bank.

Having initially introduced the Model to top management, the builder should next introduce it to some likely users in both site selection and performance appraisal including possible sponsors

of continued Model use. These officers are the Statistician, Branch Senior Vice President and possibly the branch regional vice presidents. The Bank may want some other officers present as well. If possible one or both top managers may personally lend their support. This meeting should be detailed enough to provide a foundation for individual use of the Model after the builder leaves. While officers involved in both processes should be introduced to the Model, emphasis should initially be placed on implementing the Model in branch site selection. Response at this meeting and feedback over the next few weeks should, however, be part of the final decision to pursue branch site selection alone or together with performance appraisal. It is expected that branch vice presidents will have to experiment awhile to acquire a sufficient foundation for Model use in performance appraisal. If they show a keen interest in using the Model soon, then it should be implemented in performance appraisal early, otherwise not.

These three meetings comprise the initial introduction. The builder should be able to have at least some informal arrangement with some Model sponsor(s). If a single sponsor seems appropriate, either the Executive Vice President or Marketing Senior Vice President is recommended. If sponsors are sought for each potential Model use, the Statistician and Branch Senior Vice President are recommended. Each of these potential sponsors is influential in the Bank in general or in the specific processes of branch site selection or officer performance appraisal. All of these potential

sponsors generally favor the use of environmental simulations, and while all are not in the Marketer group on the Index, they have all generally favored some innovative pursuits.

The builder should return to the Bank at fairly frequent intervals to discuss Model use with the sponsors, discuss users' questions, and assist in getting potential users to actually use the Model. He should continually be aware of the effects of the individual, task perception and political leanings of the Model users and perhaps the nonusers in the Bank upon their response to the Model. While he must facilitate the reconciliation of officers' cognitive maps of the region with Model output, the builder must also recognize the possibility of challenges to the Model based upon officers' perceived stakes in Model use, including the Bank's future, their jobs in the Bank, and the condition of the City some years in the future. Should users appear to be reluctant in using the Model or slow in understanding, the builder should think carefully whether it is a problem of cognitive understanding, political group, departmental norms, or of a potential threat to task or self-esteem. Overcoming the reluctance or hesitance may require exhortation, support, explanation, appeal to authority, or simply delay, depending upon the builder's analysis of events.

The builder should check on top management support and levels of use while he is away. Contact with sponsors and some monitor of the usage time could be maintained to do this. The Model will not be used in any regular, or rhythmic fashion for branch

site selection. It may be used to search for opportunities (Intelligence), compare alternatives or examine a chosen area in great detail (Design). A monitor will give some clues as to who is using the Model and perhaps how sophisticated his use. If early monitoring reveals that the regional vice presidents are using the Model to get current information about their branch areas, more time could be devoted to familiarizing them along with a pilot group of branch managers in the Model and its ability to project branch area business potential. Otherwise, it is recommended that the Model be implemented in performance appraisal following some success in branch site selection.

Thus far, the strategy recommended has been described as it would chronologically unfold. As the strategy unfolds the builder must consider the effect of the four elements of the organizational system upon the Model implementation into decision processes those elements affect. Each of these interactions has been discussed in detail with respect to Model implementation in site selection or performance appraisal. To recapitulate, the builder should consider 1) reconciliation of officers' current descriptions and projections of the region with Model descriptions and projections, 2) the fit of rational information with an officer's individual stakes in the Bank, career, status, and economic, 3) the different perceptions of departmental and individual tasks, perceptions which often hinder inter-department communication; and in branches, which result in Insider and Outsider officers, and 4) the differences in general banking philosophy which affect the general direction of Bank operations.

Questionnaire responses clearly indicated that Marketer-like thinkers and officers familiar with computer applications believed it necessary to know the inner workings of a simulation model as well as the meaning of its output. Branch and marketing department officers were willing to accept less inside information as sufficient than were officers in other departments but they still wanted to know about Model workings. The builder should familiarize Bank officers with the Model's inner workings sufficiently well that they feel confident in using Model output. It will be impossible to explain everything that occurs inside the Model. The detailed mathematics and logical linkages are undoubtedly beyond the officers' desire or capacity to understand. On the other hand, a superficial statement that knowledge of the output is sufficient for use will probably not be sufficient for the officers most likely to want to use the Model. Some intermediate level presentation will be necessary. This presentation should discuss some theory and comment upon some traditional banking perspectives. Some discussion of Model uses could be included. An analysis of some Model output generated during the meeting should serve to encourage officers to question assumptions and theory, their own as well as the Model's.

It has been continually reiterated that the builder should actively assist in helping officers reconcile their personal descriptions of the local environment with Model descriptions. This assistance could be critical to successful implementation if Model projections describe North Harbor as declining, stagnating or other-

wise deteriorating. The analysis of Chapter VI showed that those officers holding opinions favorable to Model use also described North Harbor as relatively dynamic and pleasant. Chapters II and IV discussed some possible reasons why these officers, even though they generally favor using environmental simulations, may reject the Model if it does not describe North Harbor in terms necessary for Bank and personal prosperity.

The Model could serve as a vehicle for negotiations between parties, individual and departmental, or a device for integration of the often conflicting factions in the Bank. As has been described in Chapter III and earlier in this chapter, conflict is not openly dealt with in the Bank. The presence of a rich source of neutral information could facilitate some healthy airing of differences concerning the Bank's overall direction, interdepartmental relations, and intra-departmental differences. These differences are reflections of basically different banking philosophies, different perceptions of task, and different individual stakes in the Bank. The builder should be aware of the possible opportunities for using the Model in this vital way. He may or may not choose to plunge into this role, however. As discussed earlier, the risk of becoming a scapegoat should be weighed heavily.

As the Model becomes familiar to a set of users in the Bank, the need to closely monitor reconciliation of personal and Model descriptions of North Harbor and the nonrational responses to Model projections will become crucial. It is the builder's dilemma

that if he wants the Model used for any purpose requiring integration and analysis of data he must confront these two very difficult barriers to successful implementation. As might be expected, no precise formulas exist for overcoming these barriers. It may be stated, however, that appeals to rationality will not alone suffice. These barriers are not eliminated by knowledge alone. While they appear to be barriers to a builder, they are reflections of an evolving sociopolitical system. As such they are part of the Bank's organizational system. The builder must convey the message that the Model will not bring about destruction of the Bank, or of any groups in the current system but will instead aid that system's evolution so that it may be better able to cope with its environment in the future. Perhaps the best prescription for a builder is that he be aware of the nonrational elements of the system (Bank) he is trying to assist.

General Summary

This chapter has attempted to assess and predict some forces and happenings in the path to successful Model implementation. The Model must be accepted and used by Bank users during some period of builder-user interaction - a critical period. The builder should time his initial introduction to coincide with a strong Bank demand for environmental information and introduce the Model to groups of officers most likely to want to accept and use a Model. The case

for use of Bank officer sponsors for each Model use was made. Sequential introduction to processes was favored over simultaneous introduction.

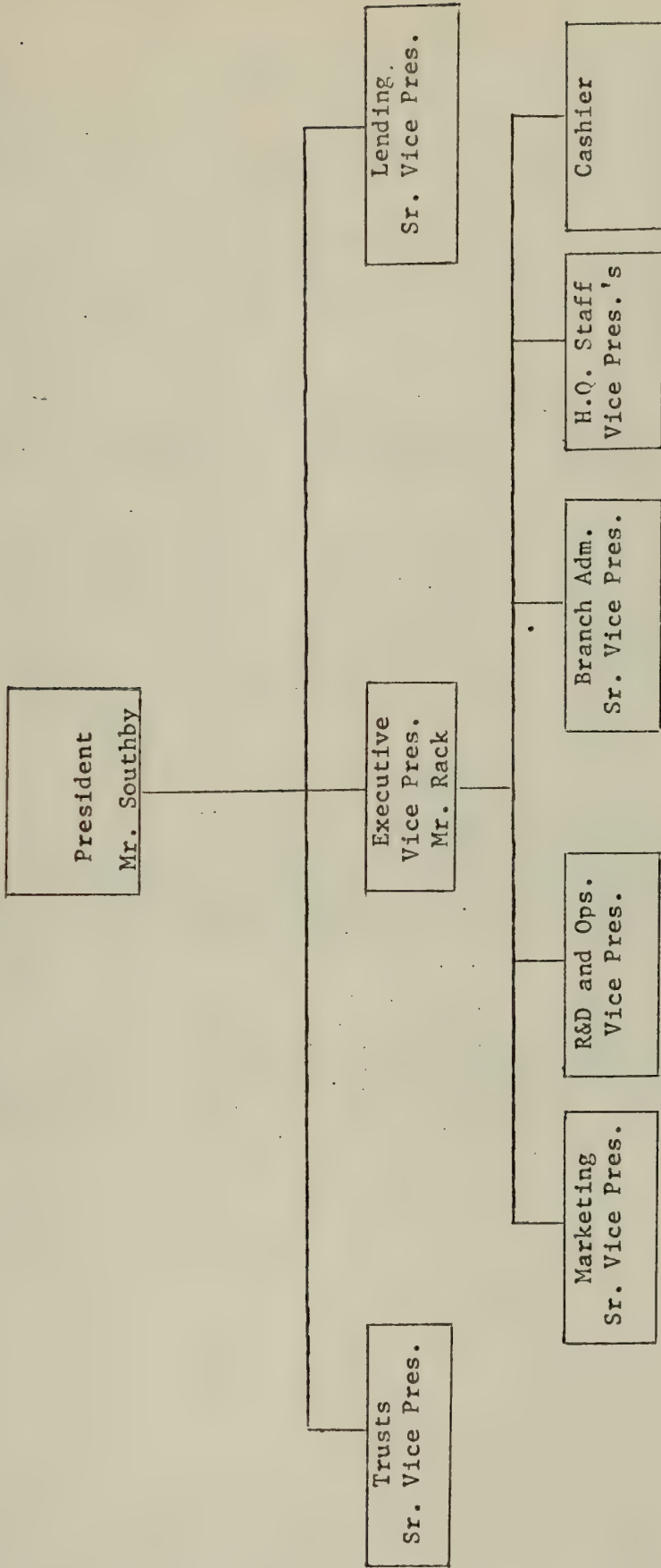
Three key steps in the implementation were discussed - acceptance by top management, use in branch site selection, and use in performance appraisal processes. The necessity for some degree of top management acceptance was stressed.

Finally a specific strategy for implementation was discussed including some of the barriers which might be encountered.

APPENDIX A

THE BANK

Organization Chart



Date _____

If so, during what time period? (mo. & yr.) _____ to _____.

Aside from work directly related to the Bank, please name any organizations, associations, or committees of a professional, service, voluntary, governmental, social, or recreational nature to which you belong or in which you have participated during the last year to the extent of at least one activity or contact per month. Please list in order of the time you have spent in the last year, the most time-occupying activity first. Include such things as directorships, country clubs, community committees, service clubs, and so on.

	Organization or Activity	Your Position	Location or Name of Branch or Lodge, etc., of Organization
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

Please list any hobbies, sports, or other leisure activities that you have been engaged in that have occupied a total of more than ten hours during the last year. Again, list in order of the time you have spent, with the most time-occupying activity first.

1.	_____
2.	_____
3.	_____
4.	_____
5.	_____

[Please note: The following two questions are optional.]

Religious affiliation: Catholic ___ Jewish ___ Protestant ___ None ___

Political affiliation or inclination:

Democrat ___ Republican ___ Independent ___

II. WORK RELATIONSHIPS AND SOCIAL RELATIONSHIPS

If you had to name one person who has had the greatest influence on your professional or managerial learning at the Bank, who would it be? (Name the person, even if he is no longer at the Bank.)

If you had to name one person who now works in the Bank whom you would most like to work on a special project with, who would it be?

Please name from one to three people from the Bank with whom you most often have lunch. (If none, write "none".)

If you regularly drive to or from work with another person or people in the Bank, please give the name(s):

Please name from one to three people who now work at the Bank whom you have seen more than once every two months in the last year on a social basis outside working hours in a small gathering.

If you had to name one person who now works at the Bank whom you would like to know better socially outside working hours, who would it be?

III. OPINION QUESTIONS

For each of the following statements, please circle the number on the scale that best expresses your opinion. There are no right or wrong answers. We are interested in your honest opinion.

Commercial banking is facing an increasingly competitive era.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

When it comes to learning the banking business, experience is the best teacher.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

When it comes to using computers in this Bank, a little knowledge is a dangerous thing.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

In the face of competition from other banks, we should expect considerable loyalty to us from our commercial customers.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Computers are at their best when used for routine operations.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

When dealing with household customers, we should expect considerable loyalty in the face of competition.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

In today's competitive environment, a bank like ours needs to aggressively seek new ways to make money.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

In today's competitive environment, a bank like ours needs to look for more of the kind of business it already is good at.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

My job is a good one.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

This organization is not a good place to work.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

I am kept fully informed of what I need to know to do my job.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

The differences of opinion that occur between officers in this organization are healthy for arriving at sound decisions.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

I am optimistic about the performance of this Bank over the next five years.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

When I think of my own future career in this Bank, more often than not I feel optimistic.

Strongly
Disagree

Neutral

Strongly
Agree

1

2

3

4

5

6

7

IV. PERFORMANCE APPRAISAL

The following statements have to do with evaluation and performance appraisal of officers in banks. For each statement, please circle the number on the scale that best expresses your opinion of the statement as a whole.

Performance appraisal of officers should follow the same form for everyone.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

The nature of a typical bank officer's work makes it inappropriate to appraise him against budgeted goals or similar quantitative standards.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Taking part in a performance appraisal interview is an uncomfortable experience for me.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Officers should be evaluated primarily on how well they do their job for the bank, and not on seniority or how hard they have worked.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

An officer should hear about his performance directly from his boss.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

Performance appraisal interviews should stress weaknesses rather than strengths.

Strongly
Disagree

Neutral

Strongly
Agree

1

2

3

4

5

6

7

One should not expect to be able to judge what his raise or promotion will be from the discussion in his performance appraisal interview.

Strongly
Disagree

Neutral

Strongly
Agree

1

2

3

4

5

6

7

Personality likes and dislikes should not enter into a performance appraisal.

Strongly
Disagree

Neutral

Strongly
Agree

1

2

3

4

5

6

7

V. OPINIONS ON USE OF THE COMPUTER

Computers may be programmed in several different ways to aid in the operations and management of businesses.

One type of program is one that replaces routine clerical work, making possible faster processing of data and printing of summary reports. Examples include check printing, payroll preparation and proof-in-transit. We may call this type of computer use routine programs.

A second type of use may be called operational programs. These typically require as input a wide range of information such as accounting data, customer data, and the like, and produce reports that would normally require considerable analysis. In a bank, examples include preparation of financial reports, analysis of the loan portfolio, and cash flow analyses.

A third type is process simulation or operations research programs. These are made up of a mathematical model of some process in the organization. Some of these are intended to allow management to test the effects of alternative decisions before actually making a choice, while others may provide outputs that give optimum decisions for the control of a process. Examples are simulation of future performance of investment portfolios, the fuel oil dealer service program, and programs that run oil refineries or steel rolling mills.

A fourth type of program is environmental simulation. Programs of this type simulate changes in the economy or population for a town, region or nation. The output may be used for such things as market projections and long-range planning.

For each of these four types of programs, please indicate your opinion of the statements on the next page. In each of the four blank spaces following a statement, write in a number from 1 (strongly disagree) to 7 (strongly agree) giving your opinion of the statement for each of the types of computer use. Although you may not be familiar with these types of programs, please place an answer in each blank space. We are interested in your opinion on the basis of what you know, even if it is only the descriptions above.

In each space, write in the number from 1 to 7 that best expresses your opinion, 1 being "strongly disagree" or "definitely no" and 7 being "strongly agree" or "definitely yes".

<u>Statement</u>	<u>Type of Computer Program</u>			
	Routine	Operational	Process Simulation	Environmental Simulation
I am familiar with this type of program.	_____	_____	_____	_____
We should spend more time exploring the use of programs of this type in our Bank.	_____	_____	_____	_____
This type of computer program could help me make decisions in my job.	_____	_____	_____	_____
I would be willing to put extra time into learning about the use of this type of computer program in my work.	_____	_____	_____	_____
This type of computer program would generate few, if any, identifiable cost savings in this Bank.	_____	_____	_____	_____
A manager making use of this type of program would not need to know what went into the program, but just how to read the output information.	_____	_____	_____	_____
This Bank cannot make sufficient use of this type of program to justify its development cost.	_____	_____	_____	_____

VI. DESCRIPTIONS OF NEW HAVEN AND OF THE REGION

The enclosed decks of blue and white cards are to be used for separate descriptions of the City of New Haven and of the New Haven region as a whole. Please follow the instructions carefully.

A. CITY OF NEW HAVEN

We would like you to honestly describe the City of New Haven as you see it, using the deck of blue cards provided.

Five of the cards are numbered 1 to 5 and have on them the phrases, "most unresponsive," "somewhat unresponsive," "slightly responsive," "somewhat responsive," and "most responsive," respectively. Place these five cards in a row from left to right on a table or desk top with some space below them.

Now look through the adjective cards. You may think that some of them are, to a greater or lesser extent, descriptive of the City of New Haven. Others may be quite unresponsive, unrelated, or even opposite of the way you see it. Please indicate how each word describes the City of New Haven to you by placing it in a column under the appropriately numbered card. That is, place those cards that, to you, are most responsive of the City of New Haven in a column under card 5, containing the phrase "most responsive." In a like manner, place those you think are least responsive under the card "most unresponsive," and so on.

As you place cards in columns, feel free to move them from one column to another. There may well be a different number of cards in the columns when you are through; please don't consciously try to make all the columns have an equal number of adjective cards. However, when you have finished, all the adjective cards should be placed; there should be none left over.

As a final step, please gather all adjective cards in each column together and wrap each of the five decks in a rubber band. Return these piles of adjectives along with the questionnaire in the envelope provided.

B. NEW HAVEN REGION

In the same manner that you described the City of New Haven, we would like you to describe the New Haven Region, as a whole, that is the City plus all of the surrounding suburbs as you see it. As approximate limits you may think of Guilford on the east, Hamden on the north, and Orange on the west.

Please follow the same procedure described above, using the white deck of cards. When you have finished, enclose the decks of sorted white cards, wrapped with a rubber band, in the return envelope.

VII. COMMENTS

Please use the space below for any comments you may have on the topics covered in this questionnaire. When you have finished, please be sure the entire questionnaire and the decks of sorted blue and white cards are in the enclosed envelope.

Thank you.

APPENDIX C

A Brief History of Performance Appraisal

Informal Approach

Until 1962, performance appraisal at the Bank was completely informal and usually undertaken on an ad hoc basis when promotions were necessary or raises in salary were to be given. A raise or a promotion was after-the-fact confirmation that an appraisal had been conducted. As the Bank grew and became more complex, the ad hoc appraisal came to be seen as too subjective. Bias, personalities, and favorites were widely felt to be more important influences on appraisal than performance.

Team Ratings

Realizing the inequity of an ad hoc method, the Personnel Department, with the assistance of outside consultants, devised a formal appraisal sheet to be used on all Bank officers, including branch managers and their assistants. (For example of form see Exhibit 1).

In this system, each officer was to be evaluated annually. A team of three senior officers met in private, without the person being evaluated, and graded him on a point scale in comparison to a standard score for each item for the type job being evaluated. For branch managers, this team was comprised of the Senior Vice President in charge of branches, one of his assistants and the Director of Personnel. The Director of Personnel sat in on these meetings for every officer in the Bank, from the most junior to the vice president level.

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The scale for each characteristic was 0 - 6. For an branch manager, 2 and 3 were the most common standards with a few 1.5's and 4's. Six's were the exclusive property of senior vice presidents and higher. While the guide book called for ranking at whatever level the team desired, custom was that anything higher than 1.5 points above standard was required to be extensively justified with Personnel. As a man's job required more responsibilities and became more complex, different factors came to be weighted more heavily in reaching a total point score.

Points awarded in each category were added up and divided into a standard total to get a summary ratio. A ratio of 1:1 indicated standard performance. Ratios greater than 1:1 indicated superior performance and less than 1:1, sub-standard performance. At the bottom of each form, comments were added, often expanding on the numerical ratios. The Branch Senior Vice President thought these comments were often more telling than the scores or ratios. After the evaluation team reached agreement, one of its members met with the person being evaluated and discussed the team's effort. Objections on the part of the person evaluated were carried back to the team, but formal reconsideration was rare.

This system had some major advantages over the old informal process that was previously used. Consistency had been introduced into the procedure to the extent that everyone was evaluated at regular intervals on the same scales. At least one team member, the Director of Personnel, was on everyone's evaluation committee. The procedure

Appendix C (continued)

was widely and easily understood and provided the Executive Committee of the Board of Directors, the final arbiter on promotions and raises, with concrete bases for their decisions.

The Senior Vice President recalled several disadvantages of this system. There was neither oral defense by the person being evaluated nor the opportunity for written assessments before the team met. While the feelings of bias and subjectivity of the old system were somewhat reduced, they were not eliminated. The evaluation tended toward a pro forma review. The system was very time consuming in that it required the three team members to meet at least once, in addition to the meeting between the person being evaluated and a team member. Meetings typically lasted between forty-five minutes and an hour.

One-on-One

In 1968, the team approach was dropped and annual meetings of a supervisor and person being evaluated were established. This procedure, dubbed "one-on-one", employed the same appraisal forms as did the team method. With this system, however, procedure called for distribution of an appraisal form to both supervisor and person being evaluated at least one week prior to the evaluation meeting. The person being evaluated was instructed to rate himself as he saw himself. The superior also rated him before the meeting.

In the meeting, the ratings were discussed and the differences were ironed out. It was hoped that this dialogue would be frank and straightforward. Each officer was to have an active input to his own

Appendix C (continued)

evaluation. In addition to the resulting agreed-on point scale and summary ratio, calculated in the same manner as under the previous team system, comments were attached to the form by each participant; and joint comments were encouraged. Whereas the determination of points took on aspects of negotiation, the comments were done originally in ink by each participant. Upon completion of the meeting, both participants signed the final form and forwarded it with both sets of comments to the Personnel Department.

The "one-on-one" system had the advantage of allowing direct confrontation between a supervisor and his subordinate, which had been ignored or at least diverted by use of a team, only one of whose members was in on the interview. One-on-one provided an opportunity for both superior and subordinate to "tell it like it is", and to explain their perceptions of an individual's performance. It allowed for arguments that could raise or lower specific point scores. The subordinate became more fully aware of whom he worked for and came to realize that his boss was a major influence in his promotion.

The Senior Vice President recalled his statement to the Director of Personnel regarding the 1968 system:

What is beneficial is the "one-on-one". The person being appraised can really have his say. It is a matter of communicating what you think of the man's weaknesses and what he thinks of his strengths and weaknesses. In the three-man evaluation, the evaluator had to try to communicate the comments of two other evaluators whose opinions he might not share or be able to back up with specifics.

On the other hand, he felt that the one-on-one had several disadvantages. It often took a very strong superior to face an

Appendix C (continued)

honest confrontation. A successful interview required a special sense of judgment with respect to the sensitivity of the person being evaluated. The old problem of personal bias was again present, especially since each man was reviewed by his own boss. As the East Region Vice President had put it,

We'll never have high consistency. People suddenly find themselves in management, having to evaluate others, and they have no background; they don't have the guts to do it properly.

Some superiors de-emphasized the situations and acted to avoid blunt confrontation. Point scores and ratios rose appreciably on average as compared to the team approach. The Senior Vice President recalled that a member of the Executive Committee of the Board, reviewing rating sheets, once said, "All these men should be in Rome with the Pope!" Finally, while the format did provide a focus for the evaluation, it often provided too specific a focus. That is, the evaluation often became a game of points and the comment section was relegated to an ancillary place in importance. The East Region Vice President commented,

I had a session a couple of years ago that ran over four hours with an individual. . . . We got up to the end. I was going to rate him a 1.5 and he was fighting for a 2 on the last item. He was of the opinion that he wanted to get 40 points; that is, he wanted 40 points overall. He didn't get it! He got 39.5 because I just stood my guns. But many another supervisor would have given him 40.

As a result of these disadvantages, consistency in grading was lost. "It came to the point where we never used the numbers. You only used the comments and a general impression about how the guy was doing." The Executive Committee turned away from points and

Appendix C (continued)

began to look for substitute measures in determining raises and promotions. Summary cards were prepared by the Senior Vice President. What concerned him was that these forms came to be used mechanically and were filled in in the same manner as a loan application. These cards replaced direct reliance on the evaluation forms. As a result much of the original information from the person rated was lost in the final decisions on raise and promotion.

The End of Points

The Senior Vice President was convinced at the time that while the cards were necessary, the original appraisal with an emphasis on comments by both participants was more relevant to decisions. In January, 1972, then, after Personnel had received his complaints as well as complaints of others, a new format was installed retaining the one-on-one procedures, but eliminating all points and ratios. Instead, individuals were rated in seven categories, with a choice of one of four descriptive sentences for each category. (See Exhibit 2.) Forms continued to be distributed a week early to both participants. Comments were required in each category as well as in summary and both superior and subordinate were required to comment explicitly on the subordinate's strongest and weakest points. The objective of the form was to specifically elicit explanatory remarks throughout the appraisal. As the meeting progressed, agreement was reached on the descriptive phrase in each of the seven categories and a check entered. The comments of both individuals were kept to be forwarded to Personnel for entry into the file of the individual being evaluated. An additional summary sheet was prepared for each individual evaluated as

Appendix C (continued)

well. This summary provided information of the type provided in the old summary card.

Initial use of the new format apparently caused confusion. Evaluators and subordinates were not given much explanation by the Personnel Department on how to use them, and the objectives for the change were not completely clear. The West Region Vice President complained,

This new form was just sent out, and Personnel said, "This is a change in the form as it was last year. Here it is. Go ahead and use it." I think there are more questions to ask. We have got to get management and Personnel together to go over a form that gets handed out.

The previous interview focus on scores and ratios was transferred to a discussion of which of the four descriptive phrases for each category best fit the person being evaluated. The West Region Vice President best expressed this tendency when he argued,

One problem I see is that when you check a block, you are sometimes forced into it. I would like to see an additional block next to the main block where you could put down a plus or minus. In other words, there might be one statement there that really doesn't hold true 100% for that particular employee. He might be a little one way or the other. If they had the additional blocks, you could indicate that. In fact, I put it in anyhow.

The Senior Vice President knew that while the West Region Vice President expressed the desire for finer gradation most strongly, many other managers echoed the position.

Uncertainly as to the relative or absolute nature of the scales was yet another problem. Everyone knew that under the old system a 6 went only to a Senior Vice President, but under the new system there was misunderstanding as to whether a check in the top

Appendix C (continued)

box was reserved for senior management or not. In areas like "Professional Knowledge," a category on the new form, managers tended to view the scale as an absolute. That is, only a very senior vice president could get a check in the first box. In other areas, however, the scales were held to be relative and a man doing his best in "Leadership" could get a first-box check.

Some managers felt that more time was spent arguing which box should be checked than discussing each other's comments. In total, performance reviews became less precise. There was very little way of discriminating among good, mediocre, and poor officers. It seemed to many that ad hoc summaries were likely to become more, rather than less, crucial in the final analysis.

Appendix C (continued)

Exhibit 1

PERFORMANCE EVALUATION

Name Peter Seibert Age 49 Company Service 29

Position Vice President and Manager Level 12 Service on Job 8 yrs

Factor	Rating Job/Man	Points	Comments
Technical Skills and Knowledge	3.5 3.5		Well versed in all phases of branch banking
Capacity and Dependability	3.0 3.5		Can always be counted on to get the job done
Analytical Capability	3.0 3.0		Does all but most difficult analyses without assistance from regional v.p.'s
Acceptance of Responsibility	4.0 4.0		When he has been given a job you know he considers it his. He instills accountability in his subordinates as well.
Accuracy and Judgment	3.0 3.5		A fine sense of judgment.
Initiative and Adaptability	2.5 3.0		Considering that branches are not very much jobs requiring much initiative, this man is above average.
Personality, Tact and Persuasion	3.5 4.0		Well thought of by customers and employees alike. Goes out of his way to learn about his help and makes customers feel at home.
Organizational Ability	2.5 2.5		Since most organizing is done for the branch, gets very little chance to do any. Exhibits Sufficient capacity to meet requirement.
Leadership	3.5 4.0		Is a fine example to his assistants and employees.
Evaluation Points		30.5	Position Points: 28.5 Ratio: 1.11 ; 1

Rated by: W.A. McNally Concurred in by: J. Burkhardt

Date: 2 April 1965 Concurred in by: C. Fox

Appendix C (continued) Exhibit 2

PERFORMANCE APPRAISAL Officers and Staff Supervisory Personnel

NAME	DEPARTMENT Branch	LAST INCREASE		Job GRADE	PRESENT SALARY	RECOMMENDA- TION (annual)	NEW SALARY
J. Leuhm	Admin.	Amount	Date				
POSITION	TITLE			5			
Branch Officer & Mgr.	Manager						

PROFESSIONAL KNOWLEDGE: Depth and breadth of understanding of basic principles, disciplines, fundamentals, techniques, and procedures necessary in his particular field of professional activity or specialization.

- ☐ Has thorough and authoritative knowledge of his field, with an excellent grasp of new developments.
- ☐ Has full working knowledge of his field, and is well-informed on most new developments.
- ☐ Has acceptable knowledge of the basic fundamentals in his field to accomplish his job, and keeps current with some of the major new developments.
- ☐ Performance is hampered by limited knowledge of basic fundamentals in his field or failure to keep informed of new developments.

COMMENTS:

ANALYTICAL ABILITY AND JUDGMENT: Capacity to secure all essential facts and opinions and to arrive at sound conclusion based on objective reasoning and evaluation of their inter-relationship.

- ☐ Has exceptional ability to obtain all pertinent facts of complex and broad problems, to analyze them in a manner which consistently produces outstanding, imaginative conclusions.
- ☐ Can be relied upon to obtain the essential and more readily identifiable facts of most non-routine problems, and generally arrives at practical and valid conclusions.
- ☐ Occasionally overlooks significant facts in arriving at conclusions, but is capable of solving most routine problems.
- ☐ Tends to reach conclusions without obtaining pertinent facts to support his position, or lacks ability to sufficiently analyze facts when available, resulting in erroneous or unsupportable decisions.

COMMENTS:

INITIATIVE: Ability to proceed independently, without specific instructions, and in a self-reliant manner within the scope of his work, and level of responsibility.

- ☐ Is very resourceful in initiating positive action on new ideas without relying on specific instructions.
- ☐ Takes positive action on his own initiative in carrying out all but the most difficult of his assignments.
- ☐ Usually acts on his own initiative in the daily conduct of his job, but requires direction in non-routine, complex matters.
- ☐ Seldom acts on his own, usually waiting for specific instructions and direction to carry out assigned duties.

COMMENTS:

PRODUCTIVITY: Quality and quantity of the employee's contribution, and the consistency in producing accurate, thorough and dependable results.

- ☐ Very conscientious and can be relied upon to produce consistently a large volume of high quality work.
- ☐ Generally produces a large volume of high quality work on most assignments requiring unusual accuracy and sense of responsibility.
- ☐ Usually dependable and meets acceptable standards for quality and quantity but seldom exceeds basic requirements of the job.
- ☐ Cannot be depended upon to meet job requirements for quantity and/or quality of work without frequent follow-up.

COMMENTS:

Appendix C (continued)

Exhibit 2

SELF-EXPRESSION: Ability to organize, express and communicate ideas and to present oral and/or written recommendations in a manner which effectively conveys understanding and gains acceptance and approval.

- ☐ Skilled in communicating well organized ideas in nearly all situations, strongly influencing favorable consideration of his recommendations.
- ☐ Acceptance of his ideas and recommendations is generally facilitated by good oral and written communication.
- ☐ Ability to communicate ideas is adequate for most daily situations in which organization and expression of complex ideas or detail is not essential.
- ☐ Acceptance of ideas or recommendations is hampered by inability to communicate effectively.

COMMENTS:

LEADERSHIP: Ability to achieve goals and objectives through effective planning, organizing and controlling the combined efforts of his group.

- ☐ His fine leadership qualities generate cooperation and consistently high morale in his group.
- ☐ An effective leader who usually inspires his group towards good teamwork and morale in meeting objectives and goals.
- ☐ Only moderately successful in getting group results.
- ☐ Occasional friction, dissention, and/or low morale, resulting from ineffective leadership, hamper productivity of the group.

COMMENTS:

ABILITY TO DEVELOP PEOPLE: Effectiveness in guiding and training those under his direction to improve their overall performance and increase their potential for advancement.

- ☐ His dedication and effectiveness in guiding, training and developing people contributes substantially to the overall improvement and promotability of his employees.
- ☐ Generally helps his people to improve themselves by advising, counselling or coaching them for additional responsibility and advancement.
- ☐ Shows limited inclination or effectiveness in helping his people to improve and develop.
- ☐ Shows unwillingness and/or inability to assume responsibility to develop and improve his people.

COMMENTS:

1. A. - What do you consider your outstanding work characteristic?

.....

B. - What do you think is your weakest work characteristic?

.....

Employees Signature _____

Emp. 24-680024

Appendix C (continued)
Exhibit 2

page 3

PERFORMANCE APPRAISAL DISCUSSION REPORT

Informal discussion of the Employee Performance Appraisal between the employee and his immediate supervisor is essential to successful personnel development.

The following guidelines will assist in keeping the discussion factual in interpreting judgments and recommendations objectively, and in adapting the performance interview to the needs of the individual:

Encourage the employee to analyze his own strength and weaknesses. Use specific illustrations and actual examples to highlight outstanding strengths and significant weaknesses. Be as thorough and helpful with the outstanding employee as with the employee who has clear-cut problems in performance. Discuss with the employee specific and realistic objectives and self-improvement plans for the future. Emphasize performance rather than personality, and improvement rather than shortcomings, so that the employee can more easily understand and accept the appraisal.

SUMMARY OF PERFORMANCE: The overall manner in which the employee carries out his assigned duties and responsibilities, taking into consideration judgments made about specific traits.

- ☐ **OUTSTANDING.** Employee's overall performance is consistently excellent, approaching the highest level that could be expected on the job.
- ☐ **VERY GOOD.** Employee's overall performance substantially exceeds normal job requirements and is fully adequate in all respects.
- ☐ **GOOD.** Employee's overall performance meets job requirements, with weaknesses in certain areas clearly outweighed by strength in other characteristics.
- ☐ **MARGINAL.** Employee's overall performance is marginal because a major weakness in one or more characteristics is not compensated by strength in others.
- ☐ **INADEQUATE.** Employee's overall performance is deficient enough to justify release or demotion unless immediate improvement takes place.

What is employee's outstanding work characteristic?

What is employee's weakest work characteristic?

POTENTIAL:

(Present your objective opinion and analysis of potential for advancement, indicating possible alternative avenues. Consider past performance, capacity and willingness to handle greater responsibilities, cooperation with associates, personal goals, emotional stability, intellectual capacity and other pertinent personal circumstances. If promotable, estimate when ready for next advancement and indicate what is being done to broaden capacity.)

APPENDIX D

Details of Index Construction

This appendix presents the details of construction of the Index used to differentiate two different banking philosophies.

$$I = S_J + S_A + S_B + S_O + S_C + S_{CA} + S_P$$

1. S_J = Total Job Score

a. $S_J = \frac{W_{J1} + W_{J2}}{2} + W_{BONUS}$

b. $W_{J1,J2}$ = weight for current employing unit (1), immediately preceding employing unit (2).

1) Weights

a) 0 = President and those units reporting immediately to him (Trust & Lending) or West Branches. (Preliminary interviews showed a great gap between opinions in East and West Branches. The West Regional V.P. and two of his managers showed Banker opinions.)

b) 1.5 = Operations, Headquarters, Central Branches. (While reporting to the Exec. V.P., these groups' work is such as to involve them with all departments. In addition, the largely traditional functions they perform tends to give them a perception intermediate to the other 2 groups.)

c) 3.0 = Executive Vice President, Marketing and East Branches. (Preliminary interviews have led to the belief that these groups are, by and large, the most aggressive and innovative. They are strong marketers. The Executive Vice President has already been put forth as the "leader" of that group.

c. $\frac{W_{J1} + W_{J2}}{2} = \text{Basic Job Score}$

1) Criterion of time in current job.

Appendix D (continued)

- a) If time in the current unit was greater than 6 years, job socialization was thought to have been sufficient to leave the previous unit with relatively little influence over current beliefs about the Bank and banking. Therefore, for individuals with more than 6 years in their current unit, Total Job Scores = Basic Job Score = W_{J1} . ($W_{J2} = W_{J1}$)
 - b) If an individual's time in current unit was between 2 and 6 years inclusive, his current beliefs about the Bank and banking were thought to be a composite of both current and previous unit. Therefore, for individuals with 2 to 6 years inclusive in their current unit, Total Job Scores = Basic Job Score = $\frac{W_{J1} + W_{J2}}{2}$.
 - c) Beliefs of individuals who have been in their current unit less than two years were thought to be relatively more influenced by the preceding job than were beliefs of individuals in their current unit from 2 to 6 years. A bonus, W_{BONUS} , was, therefore, added to their Basic Job Score.
- d. Bonus Score, W_{BONUS}
- 1) The Bonus Score was added to the Basic Job Score for those individuals who had been in their current unit less than 2 years.
 - 2) Weights
 - a) The bonus weight was .5.
 - b) The weight was applied if the difference in weights of the current and previous employing units ($W_{J2} - W_{J1}$) was not 0.
 - 1) If ($W_{J2} - W_{J1}$) did equal 0, the current and previous units were defined to share similar opinions and beliefs as indicated by their common job weights (W_J). In this case, the individual's Job Score (S_J) was equal to the Basic Job Score as defined in c.1), a) or b) above.
 - c) If ($W_{J2} - W_{J1}$) was positive, the individual had moved from a heavily weighted unit to a lesser weighted unit, i.e., from a Marketer-tending unit to a Banker-tending unit. In this case the Bonus, W_{BONUS} , was added to the Basic Job Score, i.e., it was +.5.

Appendix D (continued)

- d) If $(WJ2 - WJ1)$ was negative, the individual had moved from a lightly weighted unit to a more heavily weighted unit, i.e., from a Banker-tending unit to a Marketer-tending unit. In this case the Bonus was subtracted from the Basic Job Score, i.e., it was $-.5$.
- e) Therefore, for individuals having less than 2 years in their current unit.

$$\text{Total Job Score} = \frac{WJ1 + WJ2}{2} + \text{Bonus}$$

2. S_A = Age Score

- a. $S_A = .5$ if age < 42.5 years or,
0 if age ≥ 42.5 years.

- 1) The median age of bank officers is 43 years. Since Bankers were thought to hold traditional opinions and beliefs, older officers were scored lower, i.e., as Banker-tending.

3. S_B = Score for total years at the Bank

- a. $S_B = 1$ if total years are < 6 or,
0 if total years are ≥ 6 .

- 1) The criterion value of 6 years was chosen in the belief that opinions and beliefs have changed since the current President took office 5 years ago.

4. S_O = Orientation Program Score

- a. $S_O = 1$ if an individual did participate
0 if an individual did not participate.

- 1) While the Orientation Program has apparently been de-emphasized, its importance throughout the 1960s has led to the belief that it involves a major dimension of difference in officer beliefs and opinions with those officers who participated being associated with innovation and change.

5. S_C = College Degree Score

- a. $S_C = 1$ if individual has a college degree
0 if individual does not.

Appendix D (continued)

- 1) While not directly linked to any single dimension of difference it was believed that this level of education encouraged more aggressive opinions and beliefs.

6. S_{CA} = Analysis Major Score

- a. S_{CA} = .5 if individual holds a college degree with an analytic major (engineering, math, economics, physical sciences, etc.)
= 0 if individual did not hold a degree with an analytic major.

- 1) An analytic major was thought to associate with a quantitative perspective tentatively identified with the Marketer group.

7. S_p = Political Affiliation Score

- a. S_p = .5 if individual is Democrat or Independent
= .25 if individual expressed no political affiliation
0 if individual is a Republican.

- 1) This variable was thought to be of secondary importance but definitely linked to the issue of traditionalism, i.e., Republican affiliated individuals were thought to tend toward more traditional beliefs.

Discussion

The weights assigned to the Index component variables were arrived at after some extensive review of interview transcripts, other research in the Bank and other discussions with Bank officers. The low opinions branch officers espoused for lending officers and vice versa was a key element to heavily weighting current and past job. The structural organization was another more general manifestation of some job-related differences. Job history was cut at two jobs rather than three or more because past effects were thought to fade in importance and because simplicity was sought.

Appendix D (continued)

The differing philosophies were not purely a reflection of job, however. Some initial analysis confirmed this. Age, presence in the orientation program and a college education were all intuitively believed to be influential and were confirmed to play some part in a changing Bank in a review of earlier research.

In general, the Index was not engineered to any precise set of specifications. Its test was to be in picking officers known to be Marketers or Bankers and in gaining some level of Bank management acceptance. It passed both of these.

Using a Chi-Square Goodness of Fit test,¹ the Index placed officers expected to be Bankers into its lower end and Marketers into its high end sufficiently well to be statistically significant at $\alpha < .1$. This test is not sufficient to claim that the Index is a powerful differentiator of banking philosophies but it confirms the general differences and description of individuals differing greatly. The Index was not intended to be a statistically rigorous differentiator.

¹John T. Roscoe, Fundamental Research Statistics, Holt, Rinehart and Winston, New York, 1969, pp. 190-192.

APPENDIX D1

Details of Cross Tabulation of Opinions Concerning General Banking Issues and Performance Appraisal versus Banking Philosophy

Prior hypotheses were developed for each of the fourteen general opinion and eight performance appraisal variables. These priors were of two types, depending on the variable. The first type was the prior belief that there was no relationship between the particular opinion variable and political camps in the Bank. The second type was the prior that either Bankers or Marketers would score higher than the other on the particular variable with the Middle group falling in an intermediate position.

In summary, the hypotheses are specific to the order of scoring by all three groups. A prior hypothesis will be considered confirmed if the order of the three groups is 1, 2, 3 or 3, 2, 1 as predicted.

No hypotheses were formulated with the Middle group scoring either highest or lowest. The Middle group is hypothesized to express an intermediate position on all variables. When this is not the case, the hypothesis is disconfirmed. Several disconfirmations from this occurrence have revealed some interesting possible explanations for behavior of the Middle group. These will be discussed.

There are six possible rank orders of the three groups for any given cross-tabulation.

1	1	2	2	3	3
2	3	3	1	1	2
3	2	1	3	2	1

Appendix D1 (continued)

Since each prior hypothesis may be satisfied with only one of these six possible orders, the expected number of confirmations, if they are generated in a random manner, is 1/6 of the total number of hypotheses.

For this analysis, hypotheses of no relationship, i.e., no prior, were ignored in computing fractions of confirmation. For the general opinion questions, eleven hypotheses were formulated. If they are confirmed on a random or chance basis, i.e., if there is no relationship between general political opinions and political groups, one-sixth, or about two hypotheses, would be expected to be confirmed. For the performance appraisal questions, seven prior hypotheses were formulated. If there were in fact no relationship, only about one would be expected to be confirmed.

Tests of two types were performed. First the binomial probability of getting the fraction of hypotheses confirmed that were observed confirmed was calculated for each area in which a pattern was sought. Second, the difference in mean scores between Marketers and Bankers was tested statistically for each hypothesis using the Student-t distribution.

The following is a list of the opinion questions, the prior hypotheses formulated, the results, and listing of the mean scores for each of the three Index groups.

128 Commercial banking is facing an increasingly competitive era.¹

¹ All opinion and performance appraisal questions were answered on a scale of 1-7 with 1 = strongly disagree and 7 = strongly agree.

Appendix D1 (continued)

Prior - None. Widespread agreement was expected on this question. The overall average was 6.81.

Results - as expected

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	6.80	2
	Middle	31	6.84	1
	Marketers	11	6.73	3

- 129 When it comes to learning the banking business, experience is the best teacher.

Prior - Bankers will score higher than Marketers.

Results - disconfirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	5.40	3
	Middle	31	5.61	1
	Marketers	11	5.46	2

- 130 When it comes to using computers in this Bank, a little knowledge is a dangerous thing.

Prior - Bankers will score higher than Marketers.

Results - confirmed:¹ 24.1.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	5.0	1
	Middle	31	4.45	2
	Marketers	11	3.0	3

Discussion - It was a prior belief that Bankers did not want the computer used for more than bookkeeping and blamed supporters of the computer for wasting money on other uses.

- 131 In the face of competition from other banks, we should expect considerable loyalty from our commercial customers.

¹Using a one-tail, t-test of the difference in group means between Bankers and Marketers being in the hypothesized direction,

H₀: Avg. for Bankers = Avg. for Marketers vs.

H₁: Avg. for Bankers < (> as hypothesized) avg. for Marketers.

The difference is statistically significant at 24.1.

Appendix D1 (continued)

Prior - Bankers will score much higher than Marketers.

Results - confirmed; $\alpha < .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	4.80	1
	Middle	31	2.97	2
	Marketers	11	2.64	3

Discussion - This great difference in opinion is common to the entire Bank and not just to the two officers interviewed.

132 Computers are at their best when used for routine operations.

Prior - Bankers will score higher than Marketers.

Results - confirmed; $\alpha < .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	4.1	1
	Middle	31	3.47	2
	Marketers	11	2.64	3

Discussion - Like variable #130, this question was intended to elicit evidence of traditional versus non-traditional thought. In prior interviews some lending and branch officers seemed to think of computers as automated bookkeepers only, while others wanted to use more advanced applications.

133 When dealing with household customers, we should expect considerable loyalty in the face of competition.

Prior - Bankers will score higher than Marketers.

Results - confirmed; $\alpha < .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	4.1	1
	Middle	31	2.87	2
	Marketers	11	2.72	3

134 In today's competitive environment, a bank like ours needs to aggressively seek new ways to make money.

Prior - Marketers will score higher than Bankers.

Results - disconfirmed. Marketers did score higher than Bankers but Bankers scored higher than the Middle group.

Appendix D1 (continued)

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.7	2
	Middle	31	6.61	3
	Marketers	11	6.91	1

Discussion - It is interesting to note that both extreme groups want to seek new ways to make money, while the Middle is slightly less in agreement.

- 135 In today's competitive environment, a bank like ours needs to look for more of the kind of business it is already good at.

Prior - Bankers will score higher than Marketers.

Results - disconfirmed. Bankers did score higher than Marketers, but Marketers scored higher than the Middle group.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.2	1
	Middle	31	5.52	3
	Marketers	11	5.9	2

Discussion - For the second time, the Middle scores lower on a question dealing with activity. It seems that both extreme groups are more involved than the Middle.

- 136 My job is a good one.

Prior - None. Expected that more personal feeling would come through than political leaning.

Results - There was no order sufficient for any ex post confirmation of a B/M hypothesis, but the difference in scores between Banker and Marketer was sufficient to be statistically significant at $\alpha < .05$ in a two-tailed test.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.8	1
	Middle	31	6.19	3
	Marketers	11	6.27	2

- 137 This organization is not a good place to work.

Prior - Marketers will score higher than Bankers.

Results - confirmed; $\alpha < .1$.

Appendix D1 (continued)

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	1.5	3
	Middle	31	2.03	2
	Marketers	11	2.36	1

Discussion - The prior interviews conducted revealed a sense of dissatisfaction among officers working in systems analysis, marketing, and, to some extent, branches with Bank policies and activities. Scrapped projects and vague promotion policies were mentioned several times. This question sought to shed light on any widespread dissatisfaction and on differences in opinions among groups.

138 I am kept fully informed of what I need to know to do my job.

Prior - Bankers will score higher than Marketers.

Results - confirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	5.4	1
	Middle	31	5.07	2
	Marketers	11	4.73	3

discussion - Several branch officers spoke of lack of information. Generally, they were the more aggressive or innovative managers. It was thought that they would probably never have enough information. Their desire for information would probably facilitate their use of a new model-information source.

139 The differences of opinion that occur between officers of this organization are healthy for arriving at sound decisions.

Prior - Marketers will score higher than Bankers.

Results - disconfirmed. In fact, there was an ordering along the Index scale exactly opposite to that predicted.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	5.1	1
	Middle	31	5.09	2
	Marketers	11	4.55	3

Appendix D1 (continued)

Discussion - It was believed that there may have been some misunderstanding as to the meaning of this question on the part of the respondents. Differences of opinion between officers were possibly seen as healthy but not for healthy decisions. For example, many Marketers are against the merger, a decision taken amidst great differences of opinion. Alternatively, differences in opinion may have been seen as necessary for arriving at healthy decisions but not when these differences were personalized between individual officers. For example, the President/Executive Vice President differences are viewed as unhealthy by both Bankers and Marketers. The results, therefore, cannot add much to any insights into the differing groups.

140 I am optimistic about the performance of this Bank over the next five years.

Prior - Bankers will score higher than Marketers.

Results - confirmed; $\leq .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	5.6	1
	Middle	31	4.68	2
	Marketers	11	4.18	3

Discussion - This question was designed to bring out the difference it did because it was thought that different levels of scores would have a great effect upon the aspirations in general of Bank officers. Individuals not expecting much performance would probably not get very excited about innovative ways to increase performance. It is interesting that the group most espousing traditional opinions and beliefs is also the most confident in the face of a changing environment. (Not changing to them, however.)

141 When I think about my own future career at this Bank, more often than not I feel optimistic.

Prior - None. It was expected that the group scores would be similar in order and magnitude to the answers of the immediately preceding question.

Results - Bankers scored higher than Marketers with the Middle group in the middle.

Appendix D1 (continued)

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	5.7	1
	Middle	31	5.36	2
	Marketers	11	5.18	3

Discussion - After the fact, however, it seems to fit that on the average, a group feeling more confident of the organization's performance would also feel more confident of their own.

To summarize briefly, of eleven questions concerning opinions on general banking issues for which prior hypotheses were formulated, seven were confirmed and four were disconfirmed. This number of confirmations compares to an expectation of $1/6 \times 11$ or about two hypotheses being confirmed if there were no relationship between the various opinion questions and political groups. The probability of getting seven confirmations without any general relationship is .001¹. This relatively high number of confirmations lends support to a prior description of the opinions and beliefs of the two basic political groups, the Bankers and the Marketers. Furthermore, of the seven confirmed hypotheses, six had differences in mean scores which were statistically significant at $<.1$. While this was not considered a necessary requirement, it adds more weight to the existence of two very different political groups.

¹Confirmations were viewed as a series of binomial trials in which the probability of success for each trial was $1/6$. From a table of cumulative binomial terms, the probability of seven or more confirmations is .001.

APPENDIX D2

Details of the Analysis of Performance Appraisal Statistics

As with hypotheses concerning opinions on general banking issues, the seven hypotheses concerning Performance Appraisal were stated in terms of rank order with either Bankers or Marketers hypothesized to score higher. The Middle group was always to score between the two political groups. If there were no relationship between opinions about performance appraisal and political groups, the expected number of hypotheses to be confirmed is 1, i.e. $(1/6 \times 7)$. As was the case with opinions on general banking issues, statistical significance of differences between the mean scores of Bankers and Marketers on each hypothesis was secondary to the development of a pattern of all of the hypotheses.

The specific hypotheses, results of tests, and scores are as follows:

- 142 Performance appraisal of officers should follow the same form for everyone.

Prior - Bankers will score higher than Marketers.

Results - confirmed, marginally. The Bankers did score higher than the Marketers but the Middle group's score was equal to Bankers.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
		10	5.0	1.5
	Bankers			
	Middle	31	5.0	1.5
	Marketers	11	4.27	3

Discussion - Here opinions differ but the Middle shares the Banker's opinion. The majority, then, favors a uniform format. This does not, however, detract from the existence of a predictable difference between Marketers and Bankers, nor does it run counter to the spirit, if not the letter, of the hypothesis of order. It is, therefore, marginally confirmed.

Appendix D2 (continued)

- 143 The nature of a typical Bank officer's work makes it inappropriate to appraise him against budgeted goals or similar quantitative standards.

Prior - Bankers will score higher than Marketers.

Results - disconfirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	3.4	1
	Middle	31	3.13	3
	Marketers	11	3.26	2

Discussion - This was one of the strongest expectations. It strongly suggests that philosophies are not the main variable governing group feelings about appraisal. Immediate superior or perceived quantitative factors in job must undoubtedly be considered.

- 144 Taking part in a performance appraisal interview is an uncomfortable experience for me.

Prior - Bankers will score higher than Marketers.

Results - disconfirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	2.8	2
	Middle	31	2.13	3
	Marketers	11	3.18	1

Discussion - The impact of the evaluating superior's style seems to be one possible alternative explanation to political groups as a differentiating factor in this case. Only Regional Vice Presidents have a sufficient number of subordinates in the sample to begin to confirm this notion. Results of that cross-tabulation show that seven officers reporting to the Western Regional Vice President feel more uncomfortable during the interview (avg. 3.14) than do four officers reporting to the Eastern Regional Vice President (avg. 2.0).

- 145 Officers should be evaluated primarily on how well they do their job for the Bank and not on seniority or how hard they have worked.

Appendix D2 (continued)

Prior - Marketers will score higher than Bankers.

Results - Confirmed but only with a very low difference.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	5.3	3
	Middle	31	5.8	2
	Marketers	11	5.82	1

Discussion - This hypothesis is just marginally confirmed. In conjunction with 142, a pattern of the Middle associating with one or the other extreme develops. This should not take away from the basic objective of searching for patterns of differences between the extremes. For this reason these hypotheses have been considered confirmed. In this case traditional Bankers score lower on evaluation by effectiveness than do the majority of officers.

- 146 An officer should hear about his performance directly from his boss.

Prior - None.

Results - Marketers scored lower than either the Bankers or the Middle.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.8	2
	Middle	31	6.84	1
	Marketers	11	6.64	3

Discussion - While the difference is small, the lower score of the Marketers again suggests differences in personal style among various evaluating superiors.

- 147 Performance appraisal interviews should stress weaknesses rather than strengths.

Prior - Marketers will score higher than Bankers.

Results - confirmed.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	3.11	3
	Middle	31	3.42	2
	Marketers	11	4.0	1

Appendix D2 (continued)

Discussion - As expected, Marketers seemingly want to face their weaknesses allegedly to correct them and encourage better effectiveness.

- 148 One should not be able to judge what his raise or promotion will be from the discussion in the performance appraisal interview.

Prior - Bankers will score higher than Marketers.

Results - confirmed; $\alpha < .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	2.9	1
	Middle	31	2.55	2
	Marketers	11	1.82	3

Discussion - Differences here are both clear and statistically significant. Marketers want a definite link between their performance, evaluation and reward. Bankers are more traditional and tend toward the norm of a superior bestowing a raise unilaterally. While the Bank has in appearance moved toward a Marketer opinion on this issue, in substance there is only a faint link between a good evaluation and an equitable reward.

- 149 Personality likes and dislikes should not enter into a performance appraisal.

Prior - Marketers will score higher than Bankers.

Results - disconfirmed.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.0	2
	Middle	31	6.13	1
	Marketers	11	5.27	3

Discussion - This was a surprise but again the influence of particular superiors is probably more important than a generalized feeling in this case.

To summarize briefly, of seven questions upon which prior hypotheses were formulated, four were considered confirmed. The expected number of confirmations had there been no relationship at

Appendix D2 (continued)

all between opinions on performance appraisal and political groups was approximately 1, ($1/6 \times 7$). The probability of getting four confirmations with no relationship between opinions and political groups is .015.¹ Since this is a very small probability, there is some predictable relationship between performance appraisal opinions and political groups. In only one case, 148, was there a sufficiently large difference for it to be considered statistically significant at $\alpha = .1$.

¹The hypothesis tests were considered to be a series of seven binomial trials, each with a probability of success = $1/6$. The probability of four or more successes (confirmations) under these conditions = .015, found in a cumulative binomial table.

APPENDIX E

A Detailed Description of Analyses of Response to Statements Concerning Computer Applications

Analysis of Banking Philosophies versus Responses to Computer Application Statements

Hypotheses were formulated concerning responses to statements 2, 3, 4 and 6 versus banking philosophy groups as defined in Chapter IV. There were sixteen variables (4 questions x 4 applications each). From these twelve variables, twelve hypotheses were formulated. For many questions, the differences in response concerning routine applications alone was not expected to be great because routine computer work had been going on in the Bank for over a decade.

As was the case with the general opinion and performance appraisal questions, the hypotheses formulated for the computer-related questions were considered confirmed if their rank order was correctly predicted, including the Middle group always scoring in the middle.

Opinion and Political Group Affiliation

The following is a list of the computer-related opinion questions tested, the prior hypotheses, the results, and the mean scores for each of the Index groups. Each question will be followed by a set of application-specific hypotheses, results, scores and discussion. The number of hypotheses expected to be confirmed if there is no relationship between these questions and political groups is two:

Appendix E (continued)

We should spend more time exploring the use of programs of this type in our Bank.

154 Routine applications

Prior - Marketers will score higher than Bankers.

Results - partially confirmed. Marketers did score higher than Bankers, but the Middle scored higher than the Marketers.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	4.63	3
	Middle	31	4.97	1
	Marketers	11	4.91	2

155 Operational applications

Prior - Marketers will score higher than Bankers.

Results - disconfirmed.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	6.0	1.5
	Middle	31	5.26	3
	Marketers	11	6.0	1.5

156 Process simulation applications

Prior - Marketers will score higher than Bankers.

Results - confirmed¹; $\alpha < .1$.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	5.13	3
	Middle	31	5.61	2
	Marketers	11	6.09	1

157 Environmental simulation applications

Prior - Marketers will score higher than Bankers.

Results - disconfirmed. Marketers scored higher than Bankers,¹ but Bankers scored higher than Middle.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	5.33	2
	Middle	31	5.03	3
	Marketers	11	6.46	1

¹Statistically significant at $\alpha < .1$ for a one-tail t-test of difference in mean scores of Bankers and Marketers.

Appendix E (continued)

Discussion - While no clear reversal of high scoring groups occurred from simple to complex applications, Marketers did score significantly higher than Bankers on Process simulation; and in spite of overall hypothesis disconfirmation, they did score significantly higher than Bankers in Environmental Simulation.

I would be willing to put extra time into learning about the use of this type of computer program in my work.

162 Routine applications

Prior - None.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	8	3.25	3
	Middle	31	3.74	1
	Marketers	11	3.55	2

163 Operational applications

Prior - Marketers will score higher than Bankers.

Results - disconfirmed. The order was opposite to that predicted. A poor prediction.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>	
Scores	Bankers	10	4.56	1	} Difference here almost zero.
	Middle	31	4.39	2	
	Marketers	11	4.36	3	

164 Process simulation applications

Prior - Marketers will score higher than Bankers.

Results - disconfirmed. Marketers scored higher than Bankers but the Middle scored higher than the Marketers.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	3.75	3
	Middle	31	4.71	1
	Marketers	11	4.36	2

Appendix E (continued)

165 Environmental simulation applications

Prior - Marketers will score higher than Bankers.

Results - confirmed; $\alpha < .1$.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	3.67	3
	Middle	31	4.58	2
	Marketers	11	5.73	1

Discussion - Results here show only one confirmation. What is unexpected, however, is the high score of the Middle group on 164. This is not an indication of passivity but of activity. As expected, Bankers are the least interested group in either Simulation. There is a general shift in high responses from Banker to Marketer as application complexity increases.

This type of computer could help me make decisions in my job.

158 Routine applications

Prior - None.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	8	3.5	2.5
	Middle	31	3.48	2.5
	Marketers	11	4.09	1

159 Operational applications

Prior - Bankers will score higher than Marketers.

Results - partially confirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	9	5.67	1
	Middle	31	4.55	3
	Marketers	11	5.0	2

160 Process simulation applications

Prior - Marketers will score higher than Bankers.

Results - confirmed.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	8	3.63	3
	Middle	31	4.52	2
	Marketers	11	4.82	1

Appendix E (continued)

161 Environmental simulation applications

Prior - Marketers will score higher than Bankers.

Results - confirmed.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	9	3.78	3
	Middle	30	4.00	2
	Marketers	11	4.91	1

Discussion-- These results indicate that Marketers favor computer applications in general (versus just advanced applications) more than Bankers. The exception is Operational applications which Bankers prefer to Marketers. This response seems to emphasize Bankers' relatively low scores for simulations.

A manager making use of this type of program would not need to know what went into the program but just how to read the output information.

170 Routine applications

Prior - None.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	8	3.38	3
	Middle	31	4.42	2
	Marketers	11	4.64	1

171 Operational applications

Prior - Bankers will score higher than Marketers.

Result - confirmed.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	9	3.87	1
	Middle	31	3.68	2
	Marketers	11	3.0	3

172 Process simulation applications

Prior - Bankers will score higher than Marketers.

Results - confirmed; 4.1.

		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
Scores	Bankers	10	4.38	1
	Middle	31	2.77	2
	Marketers	11	1.91	3

Appendix E (continued)

173 Environmental simulation applications

Prior - Bankers will score higher than Marketers.

Results - confirmed; $\alpha < .1$.

Scores		<u>n</u>	<u>Avg.</u>	<u>Rank</u>
	Bankers	10	4.56	1
	Middle	31	2.81	2
	Marketers	11	1.91	3

Discussion - Responses to questions 156, 157, 164 and 165 generally indicate that Marketers hold favorable opinions about both simulation categories, opinions which would support the implementation of a model. Questions 172 and 173 show, however, that their generally supportive opinions on model use are accompanied by a strong opinion that they need to know what goes on inside the model as well as what its output states. This opinion is strongly supported in the MIS literature.¹ It will be an important consideration for any simulation model introduction and very important for an environmental simulation.

To summarize briefly, of thirteen hypotheses formulated, seven were confirmed as compared to an expected two confirmations, assuming no relationship between political groups and the opinions expressed. Two hypotheses were partially confirmed. The probability of getting four confirmations under conditions of no relationship is less than .05 ($p < .05$)², a strong indication that at least some general relationship exists.² In the case of question 157, while the hypothesis had to be considered disconfirmed, the difference was in the

¹See, for example, John F. Dearden and Warren MacFarlan, Management Information Systems, Homewood, Ill., Irwin, 1966.

²This series of hypotheses was considered a series of nine binomial trials each with a probability of 1/6 of success. The cumulative probability of four or more successes is .047.

Appendix E (continued)

direction predicted ($M > B$) and of sufficient magnitude to be statistically significant at $\alpha < .1$. The overall pattern shows Marketers to express more favorable opinions toward simulations, while Bankers generally are more in favor of routine and operational applications.

APPENDIX E1

A Detailed Description of Analysis of Response to Statements Concerning Computer Applications

Detailed Analysis of Familiarity with a Computer Application versus Responses to Computer Application Statements

Responses to the following statements concerning computer applications were cross-tabulated against Familiarity with a specific type of application:

- 3) Computer programs of this type could help me make decisions in my job. (Variables 158-161)
- 5) Programs of this type would generate few, if any, identifiable cost savings in this Bank. (Variables 166-169)
- 7) This Bank cannot make sufficient use of programs of this type to justify their development costs. (Variables 174-177)

Familiarity was defined as High if a respondent replied with a 6 or 7 to the statement, "I am familiar with this type of program" for a specific application type.

Hypotheses were that for variables 158-161 and 166-167 individuals expressing a high level of familiarity would score higher than others, and for variables 168, 169 and 174-177, individuals expressing high familiarity would score lower than others.

If there is no relationship between the level of familiarity and the opinions expressed in response to questions 3, 5 and 7, six hypotheses of the twelve formulated would be expected to be confirmed, since the ordering High/Low would be equiprobable, .5/.5. Rather than discuss each hypothesis separately as has been done thus far, the close relationship of this set of hypotheses makes a table more appropriate.

Appendix E1 (continued)

Vb1. No.	Variable Statement	Prior	Results and Scores	
			Avg.	n
158	Routine computer programs could help me make decisions in my job.	Hi knowledge group scores > Remainder	confirmed* Lo = 2.46 Hi = 3.95	11 38
159	Operational computer programs could help me make decisions in my job.	Hi knowledge group scores > Remainder	confirmed Lo = 4.46 Hi = 5.13	26 23
160	Process simulation programs could help me make decisions in my job.	Hi knowledge > Remainder	confirmed* Lo = 4.25 Hi = 5.33	40 9
161	Environmental simulation programs could help me make decisions in my job.	Hi knowledge > Remainder	confirmed# Lo = 4.05 Hi = 4.20	43 5
166	Routine programs would generate few, if any, identifiable cost savings in this Bank.	Hi knowledge > Remainder	confirmed Lo = 2.82 Hi = 3.06	11 38
167	Operational programs would generate few, if any, identifiable cost savings in this Bank.	Hi knowledge > Remainder	disconfirmed# Lo = 3.08 Hi = 3.05	26 23
168	Process simulations would generate few, in any, identifiable cost savings in this Bank.	Hi knowledge scores < Remainder	confirmed Lo = 3.29 Hi = 2.89	40 9

<u>Vbl.</u> <u>No.</u>	<u>Variable Statement</u>	<u>Prior</u>	<u>Results & Scores</u>	<u>n</u>
			<u>Avg.</u>	
169	Environmental simulations would generate few, if any, identifiable cost savings in this Bank.	Hi knowledge Remainder	confirmed* Lo = 3.64 Hi = 2.0	43 5
174	This Bank cannot make sufficient use of Routine programs to justify their development costs.	Hi knowledge Remainder	confirmed* Lo = 2.64 Hi = 1.82	11 38
175	This Bank cannot make sufficient use of Operational programs to justify their development costs.	Hi knowledge Remainder	confirmed Lo = 2.35 Hi = 1.87	26 23
176	This Bank cannot make sufficient use of Process simulations to justify their development costs.	Hi knowledge Remainder	disconfirmed# Lo = 2.95 Hi = 3.0	40 9
177	This Bank cannot make sufficient use of Environmental Simulations to justify their development costs.	Hi knowledge Remainder	confirmed Lo = 3.16 Hi = 2.60	43 5

*The difference between High and Low is statistically significant at $\alpha = .1$ using a one-tail t-test in which H_1 was that the direction of difference was as hypothesized.

#These differences were very small.

Appendix E1 (continued)

Of twelve dependent variables, on whose scores prior hypotheses were established, based upon a two-level split of application familiarity, ten can be seen to be affected by familiarity. A random expectation would have been six, given a two-way split of each independent variable. The probability of ten confirmations assuming there were no relationship is only .019.¹

¹This set of hypotheses was again considered to be a series of twelve binomial trials, each with a probability of success, $p=.5$. The cumulative probability of ten or more successes in twelve under these conditions is .019.

APPENDIX F

Procedures Undertaken in Factor Analysis of the City and Region Adjective Descriptions

The factor analyses undertaken used fifty-two cases or observations and fifty variables. The observation: variable ratio is therefore only 1. While authorities disagree as to the ratio sufficient for any inferential use of the common factors observed, they all prefer ratios greater than 1:1.¹ Such rules are not as much at issue for exploratory use of factor analysis. This study does seek to infer opinions and beliefs of all Bank officers as well as it seeks to discover underlying factors but the inference is to a population only two and one-half times the size of the sample. While the factors may be more clear if there were more observations, they are clear enough for the City to be useful now. All fifty adjectives were used in the analysis because we had no prior feeling of which might be stronger in explaining factors.

The specific procedures followed in the analysis are:

- 1) Using AQD package program WFLGEN, a correlation matrix of all fifty variables (adjectives) with each other was established.
- 2) Using program FACTOR, an original set of uncorrelated factors was estimated using the principal factor method with a communality of each variable set to be, "The multiple r^2 or the regression of the given variable on all the other variables."² Since the analysis was

¹R.J. Rummel, Applied Factor Analysis, Northwestern University, Evanston, Illinois, 1970, pp.

²R.O. Schlaifer, User's Guide to the AQD Collection, 2nd ed., President and Fellows of Harvard College, Cambridge, Mass., 1972, p. 9-7.

Appendix F (continued)

to be a common factor analysis rather than a principal components analysis, all of the variance of each variable was not expected to be explained by any set of factors. A communality less than unity seemed to be in order. The most realistic seemed to be the one described above.

3) Factors were computed until 65% of the total variance was explained. Six factors resulted for the City, seven for the Region.

4) It was felt that five was the greatest number of factors which could be interpreted with any validity. The first five factors explained 56.7% of the total variance for both City and Region. These five were chosen for rotation.

5) The first five factors were rotated orthogonally using a Varimax rotation. Orthogonal rotation was used to preserve the independence of the rotated factors. The specific rotation, Varimax, was chosen to heighten the explanation of the factors in terms of variables. That is, Varimax rotates the original factor matrix so as to maximize the number of "high" factor loadings and the number of "low" factor loadings simultaneously. An ideal result would have each variable loading "high" on a single factor and zero on all other factors. With such an ideal loading pattern, each factor could be exclusively defined in terms of a firm subset of variables, and each subset would be mutually exclusive.

Appendix F (continued)

Factor Loading Table for Region Factors

VBL.	1	2	3	4	5
N ACADEMIC	-0.05	0.05	-0.03	0.03	0.31
N ANTIQUATED	0.30	0.41	0.21	-0.15	-0.04
N BLAND	0.48	-0.02	<u>0.60</u>	0.00	-0.02
N CHANGING	0.15	0.23	<u>-0.68</u>	-0.02	-0.09
N CHARMING	-0.46	0.04	0.05	0.06	0.11
N CLEAN	<u>-0.57</u>	<u>0.27</u>	-0.07	-0.02	0.04
N COMMERCIAL	0.31	-0.07	0.04	-0.39	0.22
N CONSERVATIVE	0.26	-0.04	0.34	0.36	0.16
N CONSTRAINING	0.12	0.02	<u>0.68</u>	-0.08	0.04
N COSMOPOLITAN	-0.08	0.15	0.09	-0.13	0.41
N CULTURAL	-0.06	0.03	-0.02	0.13	<u>0.58</u>
N DECLINING	<u>0.67</u>	-0.06	0.15	-0.07	-0.02
N DIGNIFIED	-0.44	0.29	0.37	0.22	0.31
N DIRTY	<u>0.74</u>	0.13	0.17	0.07	0.05
N ETHNICALLY	-0.00	-0.02	-0.09	-0.37	0.12
N EXPLOSIVE	-0.01	<u>0.40</u>	-0.01	<u>-0.65</u>	-0.04
N FLUID	-0.09	0.33	-0.28	-0.44	0.02
N FRESH	-0.21	0.48	-0.01	0.11	-0.31
N GROWING	0.01	<u>0.46</u>	-0.27	<u>0.35</u>	<u>-0.54</u>
N HISTORIC	0.12	-0.12	-0.19	0.44	<u>0.52</u>
N IMPROVING	-0.10	0.15	-0.12	<u>0.56</u>	-0.05
N INDUSTRIAL	0.01	0.00	-0.07	-0.32	<u>0.46</u>
N INTIMATE	-0.21	<u>0.72</u>	0.09	0.15	0.04
N KALEIDISCOPIC	-0.05	<u>0.69</u>	-0.20	0.10	0.14
N LAZY	0.26	0.10	<u>0.45</u>	-0.01	-0.10
N LIBERAL	-0.02	0.26	-0.42	-0.11	0.14
N MEMORABLE	-0.19	0.25	-0.17	<u>0.53</u>	0.23
N MIDDLE CLASS	0.01	0.24	0.24	0.26	-0.16
N MONOTONOUS	<u>0.49</u>	-0.05	<u>0.52</u>	0.14	-0.26
N NEIGHBORLY	-0.32	0.32	-0.38	0.17	-0.15
N OLD	0.40	-0.11	-0.17	0.22	0.35
N OPEN	-0.03	0.32	-0.16	-0.01	0.02
N PEACEFUL	<u>-0.51</u>	0.22	-0.01	<u>0.42</u>	0.03
N POLLUTED	<u>0.64</u>	0.08	0.16	0.08	-0.04
N PICTURESQUE	<u>-0.41</u>	0.08	0.02	<u>0.62</u>	0.23
N POOR	<u>0.60</u>	-0.13	0.10	-0.08	0.07
N PROGRESSIVE	-0.14	0.41	-0.33	0.38	<u>0.45</u>
N PROVINCIAL	-0.07	0.43	<u>0.45</u>	0.18	<u>0.13</u>
N REDEVELOPED	0.19	<u>0.51</u>	-0.15	-0.00	0.22
N RESIDENTIAL	-0.22	0.19	0.04	0.02	-0.13
N RUN DOWN	<u>0.67</u>	0.26	0.14	-0.15	0.03
N SEETHING	0.41	0.41	0.23	-0.25	0.20
N SOPHISTICATED	-0.04	0.31	0.02	-0.05	<u>0.60</u>
N SPRAWLING	0.11	0.39	-0.03	-0.13	0.08
N STAGNANT	0.30	-0.24	<u>0.69</u>	-0.14	-0.15
N TEEMING	0.31	<u>0.47</u>	-0.01	-0.35	0.02
N THRIVING	0.00	0.34	-0.35	0.25	0.25
N UGLY	<u>0.73</u>	0.12	0.10	-0.22	-0.13
N VIBRANT	<u>-0.34</u>	<u>0.61</u>	-0.14	0.20	0.05
N YOUNG	-0.21	0.35	0.07	0.06	-0.44

Appendix F (continued)

Rotated Factor Loading Table for City Factors

Variables	Factors				
	1	2	3	4	5
1 B ACADEMIC	-0.09	-0.00	<u>0.64</u>	-0.31	-0.01
2 B ANTIQUATED	-0.19	0.22	-0.04	0.41	0.25
3 B BLAND	-0.01	0.21	-0.08	0.05	<u>0.67</u>
4 B CHANGING	0.42	-0.17	0.25	-0.12	-0.28
5 B CHARMING	0.25	-0.28	0.47	0.33	-0.34
6 B CLEAN	0.23	<u>-0.56</u>	0.18	0.19	0.00
7 B COMMERCIAL	-0.18	-0.12	-0.29	<u>0.52</u>	-0.23
8 B CONSERVATIVE	-0.12	0.06	-0.07	0.12	<u>0.54</u>
9 B CONSTRAINING	0.05	0.34	-0.27	0.19	0.47
10 B COSMOPOLITAN	0.16	0.03	-0.07	0.33	<u>-0.51</u>
11 B CULTURAL	-0.08	0.03	0.54	0.18	-0.20
12 B DECLINING	<u>-0.55</u>	0.31	<u>-0.13</u>	-0.17	0.05
13 B DIGNIFIED	<u>0.60</u>	-0.19	0.00	0.14	-0.02
14 B DIRTY	-0.05	<u>0.51</u>	-0.12	-0.02	-0.10
15 B ETHNICALLY	-0.11	-0.04	0.15	<u>0.51</u>	-0.16
16 B EXPLOSIVE	0.24	0.45	-0.01	0.23	<u>-0.52</u>
17 B FLUID	0.19	0.13	<u>0.50</u>	0.20	-0.27
18 B FRESH	<u>0.63</u>	0.09	0.13	-0.12	0.07
19 B GROWING	<u>0.65</u>	-0.14	0.00	0.06	-0.02
20 B HISTORIC	0.01	0.05	0.45	0.12	0.00
21 B IMPROVING	<u>0.70</u>	-0.07	-0.07	-0.25	-0.14
22 B INDUSTRIAL	-0.18	0.10	-0.24	<u>0.56</u>	-0.27
23 B INTIMATE	0.33	0.09	0.16	0.40	0.11
24 B KALEIDOSCOPIC	<u>0.53</u>	0.23	0.24	0.28	0.09
25 B LAZY	-0.23	<u>0.59</u>	-0.16	-0.19	0.21
26 B LIBERAL	0.30	0.24	0.25	-0.16	-0.35
27 B MEMORABLE	0.31	-0.13	0.37	-0.12	0.04
28 B MIDDLE CLASS	0.01	-0.07	0.13	<u>0.58</u>	0.21
29 B MONOTONOUS	-0.08	<u>0.56</u>	-0.47	-0.13	0.31
30 B NEIGHBORLY	0.20	-0.29	0.19	<u>0.55</u>	0.16
31 B OLD	0.08	0.35	0.21	0.03	0.18
32 B OPEN	<u>0.65</u>	0.22	0.27	0.04	-0.14
33 B PEACEFUL	0.20	-0.22	0.12	0.11	<u>0.54</u>
34 B POLLUTED	-0.04	0.48	-0.00	-0.12	0.00
35 B PICTURESQUE	0.19	-0.23	0.37	0.03	0.08
36 B POOR	-0.13	0.49	0.08	-0.09	-0.10
37 B PROGRESSIVE	<u>0.64</u>	-0.05	0.26	0.05	-0.31
38 B PROVINCIAL	0.18	0.50	0.10	0.31	0.03
39 B REDEVELOPED	0.44	0.10	0.03	-0.09	0.06
40 B RESIDENTIAL	0.18	-0.17	0.15	0.34	0.17
41 B RUN DOWN	-0.25	0.36	0.18	-0.11	0.06
42 B SEETHING	0.08	<u>0.56</u>	-0.01	0.09	-0.16
43 B SOPHISTICATED	0.41	0.05	0.47	0.08	0.07
44 B SPRAWLING	0.19	0.03	-0.12	0.30	0.04
45 B STAGNANT	<u>-0.56</u>	0.31	0.14	0.11	0.10
46 B TEEMING	0.40	<u>0.50</u>	0.04	0.27	0.09
47 B THRIVING	<u>0.58</u>	-0.22	0.17	0.30	0.17
48 B UGLY	-0.05	<u>0.65</u>	0.03	0.12	0.21
49 B VIBRANT	<u>0.69</u>	-0.10	0.13	0.33	-0.26
50 B YOUNG	0.20	-0.01	<u>0.59</u>	-0.08	0.02

APPENDIX G

Construction of a Composite Variable for Identifying Differences in Factor Scores as Related to Time Spent in the Region and Community Socialization

Chapter VI discusses the need to develop a new variable to capture both Time and Community Socialization. A review of possible contributors to a composite variable indicating time in the Region revealed that "Years in Bank" probably related to time of exposure also. The general expectation was that Total years in the Bank, like Age, reflected time of exposure to the City but not necessarily very much community socialization, especially if an individual moved to the region as an adult and commuted from a suburb. The specific hypotheses followed those results observed in cross-tabulating age against the factor scores. That is, those individuals with fewer than the median number of years would score higher on Factors 1 and 3 than those individuals with more, while those individuals with more than the median number of years would score higher on Factor 3. Based upon the results of Age cross-tabulations, no appreciable difference would be observed between group scores on Factors 4 and 5.

The results were as hoped for Factors 1, 2, 3 and 5. The difference on Factor 4 was small but was also different in sign and twice the magnitude of Factor 5. A longer number of years at the Bank resulted in higher scores for Factor 4. In spite of failing to get an exact replication of age in years at the Bank, Total years at Bank cross-tabulated sufficiently like expectations to warrant its inclusion in the newly formed, composite variable, Time in the Region.

Appendix G (continued)

The specific results are presented in Figure G-9.

Figure G-9

Factor	Name	Fewer Yrs.	More Yrs.	Group
		At Bank	At Bank	Predicted Higher
1	Dynamism	.35	-.37	Few years in Bank
2	Physical Impression	-.28	.30	Many years in Bank
3	Cultural/Academic Presence	.19	-.20	Few years in Bank
4	Socioeconomic Impression	-.07	-.08	Approximately equal
5	Blandness	-.03	.03	scores expected

The composite variable was constructed by attaching fixed coefficients to each contributing variable whose actual values fell between cutpoints specified during the transformation. The following is a list of components:

a) Time in North Harbor Region = $S_b + S_{hs} + S_c + S_{ba}$

b) S_b = score for birthplace

If a respondent listed North Harbor or its suburbs as his birthplace, he was given credit for spending his childhood there and 13 years toward total time in the region.

c) S_{hs} = score for high school

If a respondent went to Hillhouse he was given credit for 4 more years in total. This time was considered all socialization.

d) S_c = score for college

If a respondent listed North Harbor as his birthplace and also went to college, the assumption was made that the college was close enough to North Harbor to enable him to at least be in frequent contact. Four years were added to his total. This time is as more pure time than socialization.

In fact, of the nineteen respondents fitting this criterion, sixteen attended college within 100 miles of North Harbor, easily close enough to maintain contact.

Appendix G (continued)

e) S_{ba} = score for years at Bank

Years at the Bank is added to flesh out the Time aspect of the total and to account for non-natives working in the Bank. The number of years worked is added.

The summary statistics of "Time in N.H. Region" are:

Mean	26.86
S.D.	16.62
Minimum	1.0
Maximum	61.0
Median	25.5

The fact that the maximum time in the Region is close to but less than the maximum age is a good sign that the variable is not absurd. The low mean of 27.18 years indicates that either many respondents were born and raised out of North Harbor and its suburbs or that the new variables fail to capture time for some spending much of their lives in the area. While the latter is possible, the former is supported by the fact that twenty-three of fifty-two respondents were born beyond the North Harbor suburbs, thirty-seven of fifty-two attended high schools not traceable to North Harbor and many are young or newly arrived at the Bank.

APPENDIX H

Instruments Prepared but as yet Unused

Two environment-related instruments have been prepared and await further steps in Model introduction before they may be used. These instruments are 1) an open-ended, relatively unstructured interview designed to identify the complexity of an individual's cognitive structure with respect to the domain of environmental knowledge¹ and 2) Rotter's test of twenty-nine phrases designed to measure the extent to which an individual believes he controls his environment.²

The interview will attempt to identify and probe elements of cognitive structure. It will begin using a stimulus chosen to elicit some description of everyday environment. The stimulus will be either a set of pictures or a blank pad on which the respondent will be asked to sketch a map of New Haven. Without intruding thoughts of things that he never thought of before, the interviewer will attempt to probe the extent of the respondent's map of his local environment. The interview is envisioned as being a half hour long. The interview will be recorded; and the transcript will be analyzed to find the number of concepts the individual places in his cognitive map, the level of abstractness he displays in discussing each of these concepts, the number of interrelationships among concepts he discusses,

¹Schroder, op. cit., Chapters 2 and 3.

²J.B. Rotter, "Generalized Expectancies for Internal Versus External Control of Reinforcement," Psychological Monographs, 1966.

Appendix H (continued)

related welfare to growth through land use abstractly.

-related physical characteristics to growth in concrete manner (skyscrapers).

In this analysis, the different concepts expressed are inferred from actual comments made and grouped as shown. The level of abstract thought-expressed is placed beside the specific comment. In a separate grouping, Relational Concepts, those that evidence an individual's linking one concept to another, are listed and explained in terms of the comments listed, or separately if a comment is directed specifically at a relationship.

This interview is, as yet, untried on site. While untried, it seems to offer great promise but as can be seen from the example may be subject to great latitude in placing concepts and rating their abstractness. At least two raters will be necessary to provide a check on the analysis. No attempt will be made to force anyone into a prior framework with respect to his environment but some frameworks such as Glover's¹ have been used to form a question guide to probe the extent of the respondent's own cognitive map.

¹J.D. Glover, unpublished manuscript, 1968.

Appendix H (continued)

the abstractness of those interrelationships, the recognition of different perspectives for each of his concepts, and the manner of discussion of this map, that is systemic and organized or off the cuff and pieced together as it occurs.

An example may help to envision this instrument. One hypothetical analysis may be:

CONCEPTS USED:	<u>Transportation</u>	<u>Welfare</u>
References	1 We need more buses.	A dollar buys 3 less and less here.
Degree of Abstractness	4 Our highways are overloaded.	Jobs are tough 3 for the Spanish speakers!
<u>1=low; 5=high</u>	We need an integrated transportation complex right now.	My future life-style is largely 5 dependent on today's employment policies.
CONCEPTS USED:	<u>Aggregations of People</u>	<u>Physical Features</u>
References	I think of NH as 2 a shopping district.	3 Our city green is living history.
	3 The poor live in North Harbor.	1 Skyscrapers are vital for growth
	3 College kids could ruin us.	We are well set 1 in the fertile Housatonic valley.
	Did you see the 1 crowd at the Main Beach?	

Relationships

Growth related aspects of growth in transportation in high abstraction (overloaded highways and transport complex).

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10 FEB 82

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Thesis
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An assessment of
organizational elements
that affect the introduc-
tion of a computer-based
simulation into some
organizational decision
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5 NOV 73
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